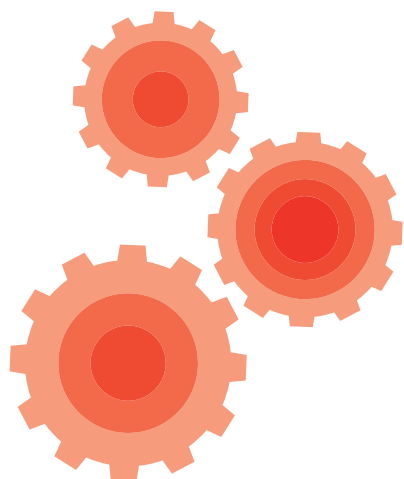


Zurich, April 2015

# The Future of Investment Banking White Paper



swiss:finance:institute

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## The Future of Investment Banking

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Final version<sup>1</sup>, April 2015

### ABSTRACT

This paper analyses the new trends and potential future developments in investment banking in the post-crisis regulatory environment, with a strong focus on Switzerland. In particular, the paper investigates how new regulations reinforce and interact with recent trends in investment banking, such as:

- Changes in the functioning of securitization markets
- Disintermediation of financing
- Digitalization and FinTech
- Globalization of trade

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<sup>1</sup> I would like to thank Désirée Spörndli for her invaluable help with this paper: for obtaining the data, for putting me in contact with investment banking representatives, and for helpful comments that allowed me to significantly improve the text. I also thank Teodor Godina for supporting me in preparing the figures.

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## EXECUTIVE SUMMARY

During the last few decades, in response to the globalization of financial markets, many investment banks have supplemented their traditional securities underwriting and corporate advisory functions with numerous additional financial products and services. These include trading various types of financial products on behalf of their clients, investment advisory, and asset management services, as well as proprietary trading and private equity operations.

At the same time, major commercial banks have entered into traditional investment banking territory by buying and building investment banking divisions. The most recent financial crisis and subsequent regulatory reforms (notably, Basel III and the Swiss Finish, the Dodd–Frank Act in the United States, and the Markets in Financial Instruments Directives and Regulation [MiFID I/II and MiFIR]) have brought up a huge agenda for change in the investment banking landscape. In this paper, some of the major trends that can be expected to shape the future of investment banking will be discussed.

The main conclusions are as follows:

- *Strict capital requirements* (Basel III and the Swiss Finish) and *market regulation* (the Dodd–Frank Act, MiFID, and MiFIR) will be pushing investment banks further away from their trading-related activities. New sources of capital such as contingent convertible securities (CoCos) might play an important role in the future capital structure choices of investment banks. The recent abolition of debt issuance taxes in Switzerland and the explicit regulatory incentives to use CoCos have the potential to cushion the negative effect of the Swiss Finish for investment banks.
- The *Securitization* market will continue to grow. It is a major source of cheap funding, and the new capital requirements make it suboptimal for banks to keep credit risk on their balance sheets. The effect of recent regulatory changes on securitization rules in the US (the recent modification of rules defining qualifying residential mortgages and the risk retention rules for collateralized loan obligations [CLOs]) will boost the residential mortgage-backed securities (RMBS) market and may potentially lead to an explosion of subprime lending similar to that which took place pre-2008. At the same time, the relaxation of suboptimal “skin in the game” rules combined with the growth in the leveraged loans market will most probably boost European CLO markets. The ECB’s planned asset-backed securities (ABS) buying program (instituted as a part of quantitative easing) will also help revive the European ABS market.
- *Disintermediation of financing*. The gradual move from loan-based financing to capital market financing and direct lending by institutional investors, and the growth of shadow banking, highlight the recent trend for “disintermediation”. These dynamics are closely related to the aforementioned developments in the securitization market and may take one of two different directions. If securitization markets develop sufficiently well, investment banks will be able to boost their lending activities without burdening their balance sheets. At the same time, the drop in secondary corporate bond market liquidity caused by the inability of investment banks to hold large inventories will most probably lead to further growth of shadow banking and private debt

lending.<sup>2</sup> Investment banks will be able to profit from this only if they are able to retain their intermediation roles between the real sector and the shadow banks.

- *Pension funds' increasing footprint in capital markets.* The aging population, falling interest rates, and the huge amounts of capital tied up in pension funds are driving up demand for non-zero-yield securities. This may potentially benefit financial intermediaries, including investment banks. This trend will be interacting with trends in the securitization market (international pension funds might become major investors in ABS).<sup>3</sup> The increasing participation of pension funds in investment banking activities (direct lending, private debt, and liquidity provision) opens important directions for strategic cooperation for investment banks. Regulation of both pension funds and investment banks will shape the future of this cooperation.
- *Globalization of trade.* As the financial markets become more integrated, the volume of trade between regions is increasing, and the reallocation of capital from low-growth, high-capital regions to high-growth, low-capital regions will intensify. This will clearly benefit global investment banks that act as major intermediaries in international markets. At the same time, they might lose a significant part of their market share due to competition from “local” national investment banks.
- *Digitalization and FinTech* pose a serious threat to the existing model of universal banking. To remain competitive, banks should react fast by fostering in-house FinTech innovations and by cooperating and creating multi-bank portals that can compete with FinTech in terms of transparency, lower margins, and consolidation of trading across asset classes.

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<sup>2</sup> Note that in Switzerland there is strong regulatory pressure against small firms issuing public debt.

<sup>3</sup> Swiss pension funds are allowed to invest up to 15% of their capital in alternative assets.

## Investment Banking in Switzerland

The term “investment bank” is commonly applied to an institution that performs certain specialized financial intermediary functions and services. Traditionally, the main investment banking functions were securities underwriting and corporate advisory services. During the last few decades, in response to the globalization of financial markets, many investment banks have supplemented these traditional functions with numerous additional financial products and services and are now often referred to as global investment banks. The most recent financial crisis and subsequent regulatory reforms (notably, Basel III, the Dodd–Frank Act in the United States, and the Markets in Financial Instruments Directives I, II [MiFID I/II]) have brought up a huge agenda for change in the investment banking landscape. The increasingly complex and constantly changing regulatory environment is posing unprecedented challenges to existing business models.

Naturally, the investment banking industry is well aware of these challenges, and most large players have responded by cutting costs, increasing operational efficiency, and changing their business models. This can clearly be seen from the recent dynamics of the three Swiss “too big to fail” (TBTF) banks (UBS, Credit Suisse, and Zurich Cantonal Bank) that are active in the investment banking businesses. As an important illustration, the recent transformations of investment banking divisions in these three banks will now be discussed.

### UBS AG

UBS was the first Swiss investment bank to retreat from trading activities into wealth management. After the most recent financial crisis, UBS management made the strategic decision that the investment bank will focus on its traditional strengths and exit much of its fixed-income trading business that had become economically unprofitable. Overall, UBS has decided to halve the risk-weighted asset base of its investment banking division. In 2013, UBS sold its over-the-counter (OTC) business in commodity derivatives to JPMorgan Chase & Co and decided to close the majority of its commodities “flow” trading business involving raw materials and financial derivatives. At the same time, the bank retained its precious metals and commodities index business, consistent with the decision to increase the overall emphasis on asset and wealth management (Reuters, 2013). Furthermore, UBS decided to expand its commodity trade finance business, largely motivated by the fact that Switzerland is a major commodities trading hub and accounts for around CHF 1.5 trillion of commodity trade finance volume, according to the Bank of International Settlements (2014). The most recent major change concerns the corporate structure of the bank: at the end of 2014, UBS AG swapped 90% of its shares into a new holding company named ‘UBS Group AG’ [see UBS AG (2014) for details]. While the main motivation for this corporate restructuring is to protect Swiss taxpayers from another bailout in the case of another crisis, the creation of the holding company will make it possible for the bank to significantly reduce the capital buffer that it is obliged to hold under the “Swiss Finish” for the TBTF banks (see Rochet [2014] for a detailed analysis of this regulation.) To further isolate risks, UBS is planning to establish a banking subsidiary in Switzerland by mid-2015. This subsidiary will specialize in retail, corporate, and wealth management business. UBS is also in the process of reorganizing its unit in the UK and is planning to create an intermediate holding company for all US units of the bank in 2016. The active measures undertaken by the bank’s management have

had a strong effect on the bank's share performance: over the last three years (Jan 2012–Jan 2015), shares in UBS AG have generated a total return of 52%.

### **Credit Suisse AG**

Following the crisis, Credit Suisse (CS) cut more than one trillion in assets. It reduced emphasis on investment banking and decided to focus more on wealth management. In particular, risk-weighted assets in the investment banking division were reduced from CHF 213 billion in 2011 to CHF 156 billion in 2013. As in most other investment banks, one of the largest cuts concerned the highly capital-intensive fixed-income business, the size of which has been reduced by 40%: the new regulation of leverage ratios (both in Basel III and in the Swiss TBTF additional regulation) combined with the move from pure OTC trading to central clearing is severely hurting operating margins. It is important to note however that this cut is much less severe than that of UBS. Overall, low returns in fixed-income trading imply that only very large players will be able to use the scale of their business to absorb the very high regulatory costs. Therefore, the expectation is that only a few, less than five, major dealers will dominate the fixed-income business in the years to come, and it is not clear whether Credit Suisse will be one of them. In 2014, Credit Suisse also decided to withdraw from commodities trading and further cut other parts of its investment banking division. In particular, it has been planning further cuts to its fixed-income business, and a reorganization of its foreign exchange operations. The goal is to boost its leverage ratio to 4.5% by the end of 2015. According to Shotter and Schäfer (2014, para. 5), the CEO of Credit Suisse, Mr. Dougan, said the reorganization would mainly affect the investment banking division—"The bulk of that will be certainly in the investment bank and that primarily cuts across the two trading businesses, equities and fixed income. Within that though, I think it is still an open question about how much will be reduced where." Credit Suisse has also been reorganizing its emerging markets business and appointed a new emerging markets head (Eraj Shirvani) in 2015. Emerging markets offer an important growth direction for investment banks. According to Credit Suisse Research Institute (2013), emerging capital markets are expected to capture a growing share of the global capital market universe relative to their economies.

UBS and CS have also moved many of their investment banking activities into their wealth management divisions, and transferred many investment banking functions to New York and London.

### **Zurich Cantonal Bank**

After the financial crisis, the serious problems experienced by the two market leaders—CS and UBS—in relation to their trading businesses created a niche for smaller local banks, including the cantonal banks. This was particularly the case for the third largest Swiss bank, Zurich Cantonal Bank (ZCB). For example, in 2012 the total derivate exposure of ZCB was about CHF 451 billion (compared with CHF 376 billion in the previous year), and the gross profit generated by trading in 2012 amounted to CHF 400 million (compared to CHF 750 million of total profit). However, despite this excellent performance, the bank decided that there must—in the future—be a clear separation between trading, sales, and services. The name of the investment banking division has been modified to "Institutionals & Multinationals", and the bank has decided to centralize the services, merge two trading desks (equities and structured products), and bundle the sales. See Zurich Cantonal Bank (2012) for details.



Clearly, the return of many investment banks to their traditional core activities raises the question of how well this business is and will be functioning in the near future. These issues will be discussed in the following sections.

### Swiss Equity Capital Markets\*

That discussion will focus on the companies that decided to go public on the SIX Swiss Exchange. 2014 was a very successful year with the highest number of initial public offerings (IPOs) since the onset of the most recent financial crisis. Six IPO deals were completed and the total placement volume amounted to about CHF 1.5 billion (SIX Swiss Exchange, 2014). Table 1 shows the IPO activity on the SIX Swiss Exchange over the past five years.

Table 1: IPOs\*\* on the SIX Swiss Exchange, 2010–2014 (SIX Swiss Exchange, 2014).

<i>Year</i>	<i>Company name</i>	<i>Issue price (in CHF)</i>	<i>Placement volume (in CHF millions)***</i>
Nov 2014	Molecular Partners AG	22.40	106
June 2014	Glarner Kantonalbank	17.50	64
May 2014	HIAG Immobilien Holding AG	76.00	200
May 2014	SFS Group AG	64.00	704
April 2014	Bravofly Rumbo Group N.V.	48.00	260
April 2014	Thurgauer Kantonalbank	74.00	185
Oct 2013	Cembra Money Bank AG	51.00	1,046
Oct 2012	Leonteq AG****	45.00	145
March 2012	DKSH Holding AG	48.00	903
Nov 2010	Peach Property Group AG	32.00	64
April 2010	Orior AG	48.00	189

\*\*IPOs represent the first offering of stock to the general public. The above table does not include listings.

\*\*\* Including executed Greenshoe.

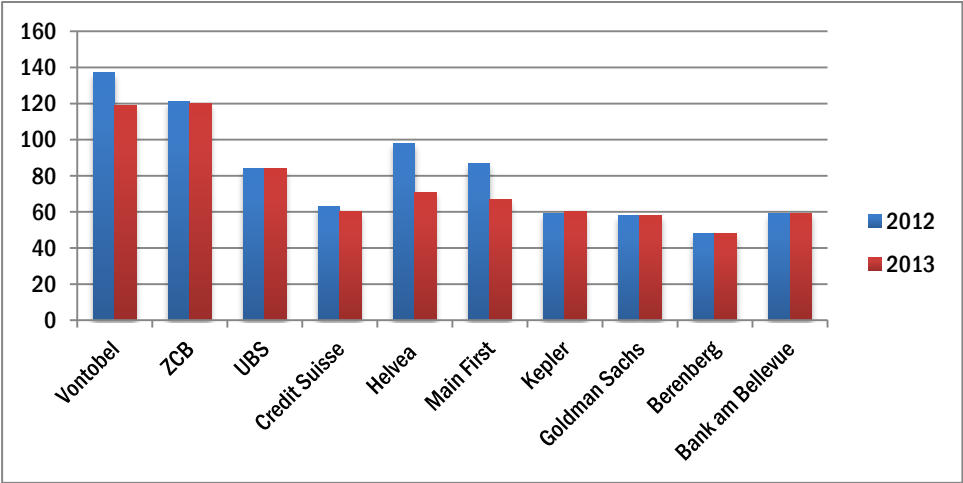
\*\*\*\* EFG Financial Products has operated since June 17, 2013, under the name of Leonteq.

The Swiss IPO market is quite active for such a small country but, as is well known, IPOs come in waves that are closely linked to economic growth. Hence, the future of the Swiss IPO market depends on the future growth of the Swiss economy. If, as expected, the Swiss government decides to abolish the equity issuance tax (a move that has been a subject of debate recently), this may further stimulate equity capital transactions. The structure of Swiss IPO underwriting seems to be stable and it is natural to expect that it will stay robust over the years to come.

\* This section was revised to avoid misleading conclusions possibly being drawn.

A very important ingredient of the “sales and trading business” (also known as “research and brokerage”) of an investment bank is equity analyses. The following figure, Figure 1, reports the largest Swiss banks—in terms of the number of companies covered—that cover companies traded on the SIX Swiss Exchange (primary or main listing). As one can see, Bank Vontobel and ZCB have the highest coverage numbers for companies traded on the SIX Swiss Exchange, strongly dominating UBS and Credit Suisse. This natural specialization of local banks in covering local firms creates a clear comparative advantage for these (much smaller) local banks relative to their gigantic global competitors, Credit Suisse and UBS, which employ hundreds of analysts in different divisions specializing in global markets.<sup>4</sup> This again suggests that the sales part of Swiss investment banking enjoys a healthy degree of competition that should discipline analysts and reduce the potential biases caused by possible conflicts of interest.<sup>5</sup> There is no reason to expect the analyst coverage structure to change significantly in the near future.

Figure 1: Analyst coverage for SIX-traded companies (ZCB, 2013; 2014).



<sup>4</sup> At the same time, this is a disadvantage for all clients that ask for global coverage.

<sup>5</sup> There exists a large academic literature studying conflicts of interest in core investment banking activities (IPOs, M&A, etc.). In particular, contributions address insider-information and analyst recommendations and the “Chinese walls” in investment banking. See Lin and McNichols (1998), Barth, Caprio, and Levine (2000), Opdyke (2001), Levin and Tadelis (2002), Ljungqvist (2003), Ljungqvist, Jenkinson, and Wilhelm (2003), Calomiris and Singer (2004), Barber, Lehavy, and Trueman (2004), Tuch (2006), Conrad et al (2006), Clarke et al (2006), Anand and Galetovic (2006), Ljungqvist, Singh, and Nanda (2006), Ljungqvist et al. (2007), Altinkilic, Hansen, and Hrnjic (2007), Wilmarth (2007), Mehran and Stulz (2007), Ljungqvist, Marston, and Wilhelm (2006, 2009), Fernando, May, and Meggison (2012), Cain and Denis (2012), Doidge, Karolyi, and Stulz (2013), Bingham (2013), Lin, Officer, and Shen (2014), Delis, Kokas, and Ongena (2014), Bao and Edmans (2015), Seyhun (2016). Some of these papers suggest mechanisms that would help reduce the magnitude of conflicts of interest; these mechanisms might eventually become part of future regulations and influence the way business will be done in the future. This concerns particularly the structure of compensation contracts. See, Bebchuk and Spamann (2010), Cheng, Hong, and Sheinkman (2010), Fahlenbrach and Stulz (2011), Bhagat and Bolton (2011), Acharya, Pagano, and Volpin (2013), Bannier, Feess, and Packham (2013), Acharya, Litov, and Sepe (2014), Effing et al (2014).

**Swiss Debt Capital Markets**

Debt capital market transactions constitute a major source of investment banking revenues: firms use debt more frequently than equity for raising external funds. However, the Swiss domestic bond market virtually froze after the Swiss Federal Stamp Tax Act came into force in 1973. Swiss companies were financed mostly through asset-based lending, and loans of more than CHF 250 million were typically syndicated within local banks, with the syndicated loan typically arranged by Credit Suisse, UBS, and/or ZCB. “In 2010, the Swiss Federal Government proposed to abolish the issuance stamp tax as part of the so-called corporate tax reform III package” (Bürgi, Meister, and Müller, 2013: para. 5). The abolition of the issuance stamp tax formally came into force on March 1, 2012 as part of the Banking Act Reform Bill that regulates the TBTF banks in order to reduce the risks of insolvency. The decision to include the abolition of the issuance stamp tax in the bill is not a coincidence and is meant to mitigate the high costs of very stringent capital requirements for TBTF banks (the “Swiss Finish” regulation). In particular, in addition to the bond issuance tax, the regulation “also abolished the issuance tax for the participation rights stemming from the conversion of continent convertible bonds and the issuance of any loan and cash debentures” (Bürgi, Meister, and Müller, 2013: capitel IV). Thus, while the more stringent capital requirements will force TBTF banks to increase the rates at which they offer loans, the abolition of the issuance stamp tax (combined with falling interest rates) may potentially stimulate both firms and TBTF banks to pursue financing through debt capital markets instead of through loans. This is part of the general trend in investment banking: firms are moving from loan-based financing to capital-market based financing. The following figures show the dynamics of major debt capital market transactions that have used debt denominated in Swiss francs, over the past 11 years.

Figure 2: Domestic debt capital market transactions denominated in CHF—major lead underwriters and total amount in CHF millions (Credit Suisse, 2015).

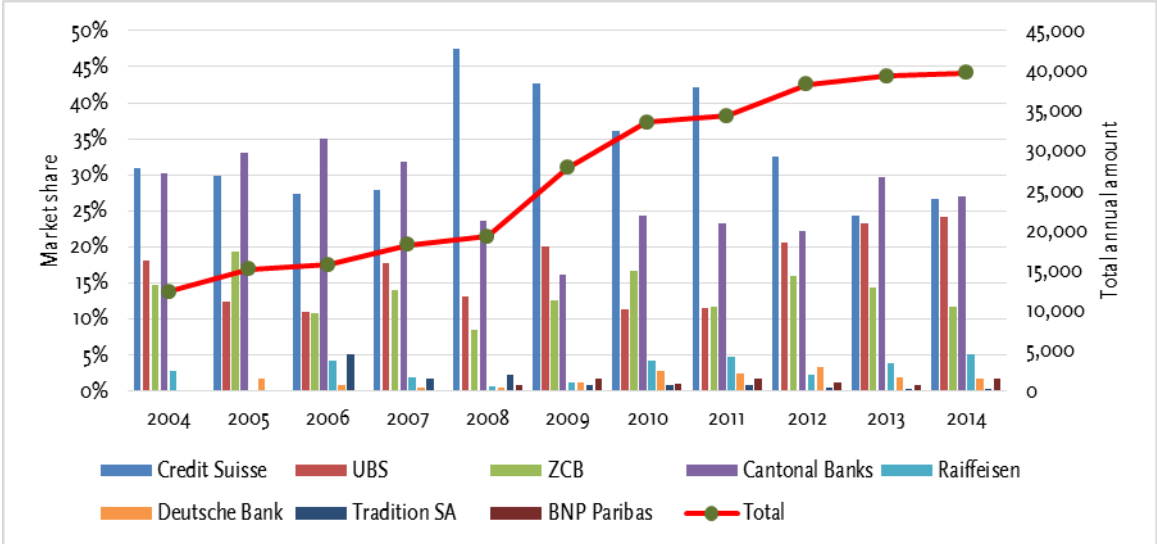
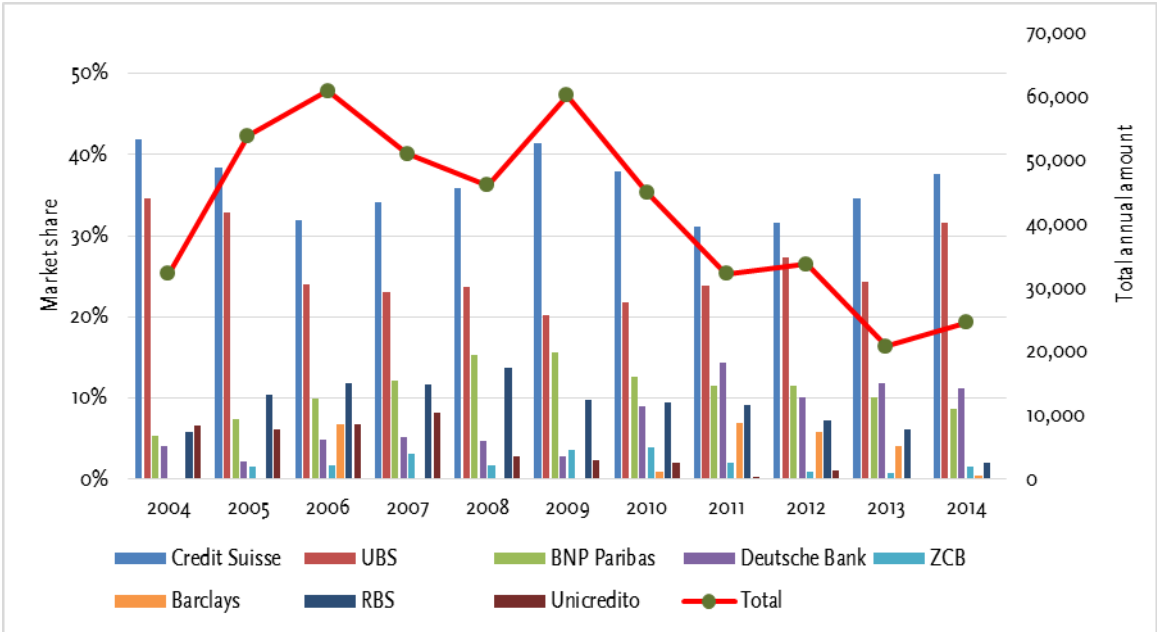


Figure 3: Foreign debt capital market transactions denominated in CHF—major lead underwriters and total amount in CHF millions (Credit Suisse, 2015<sup>6</sup>).



As one can see, the issuance of domestic debt has been monotonically increasing over time, with the total notional amount rising from roughly CHF 12 billion in 2004 to about CHF 40 billion in 2014. While the SMI only grew 56% over this period of time, the growth in debt capital market transactions is to a large extent driven by other effects such as very low (and even negative) interest rates, new regulations, and the general growth trend in debt markets. The three largest players (UBS, Credit Suisse, and ZCB) underwrite about 60% of all domestic transactions altogether, and another 30% is underwritten by cantonal banks from other Swiss cantons. Raiffeisen Bank operates about 5% of the market. Overall, the market structure has been quite stable in the past and there are no reasons to believe it will change in the near future.

Foreign transactions for CHF-denominated debt are sensitive to the exchange rate risk. The previous table shows that the dynamics were quite negative over the past few years, with the total notional amount of foreign debt transactions falling from almost CHF 62 billion in 2009 to CHF 24.5 billion in 2014. The effect of the recent decision of the Swiss National Bank to abandon the euro cap may have an ambiguous effect on future debt issuance of debt denominated in Swiss francs. On the one hand, exchange rate volatility has significantly increased, making debt more risky for foreign companies. On the other hand, the risk of a strong appreciation in the Swiss franc is (arguably) quite low. Furthermore, the drop in Swiss funding costs generated by the negative interest rate set by the Swiss National Bank combined with investors' demand (mostly driven by insurance companies and pension

<sup>6</sup>Prior to being acquired by RBS in 2007, ABN AMRO was an important market participant. In the figure, ABN AMRO has been merged with RBS data.

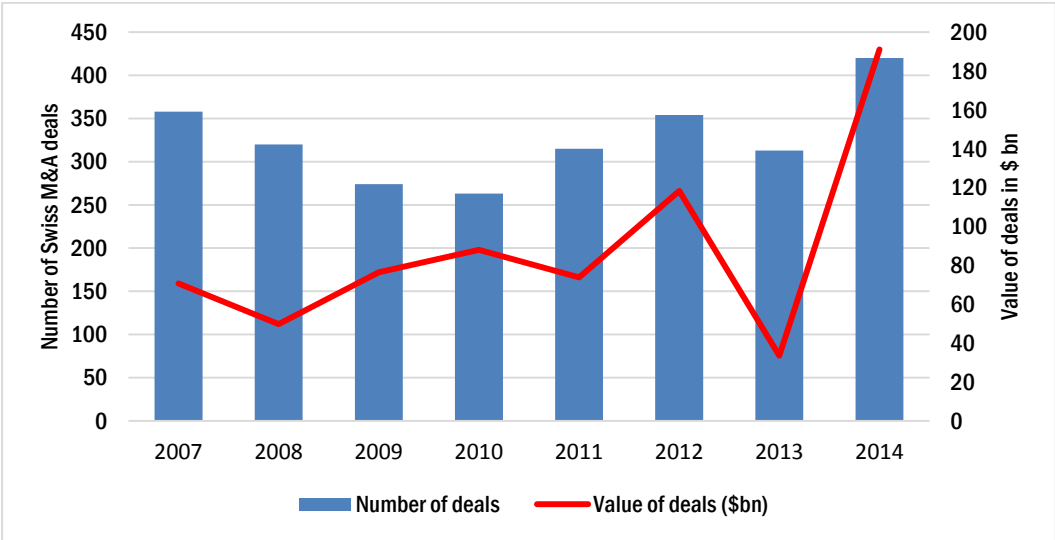
funds) for yield makes corporate debt issuance very attractive. While it is too early to talk about the magnitude of these effects, 2015 has already seen almost CHF 3 billion of issuance, with the largest transaction being the issuance of CHF 1.25 billion of bonds by Apple (lead managers were Credit Suisse and Goldman Sachs).<sup>7</sup>

It should also be noted that the secondary market for debt listed on the SIX Swiss Exchange is very active, in particular for bonds and structured notes, largely because Swiss pension funds and private banks require a continuous supply of investment opportunities. For example, the overall SIX Swiss Exchange turnover of bonds was CHF 166.77 billion in 2014.

**Swiss M&A**

As Figure 4 shows, the Swiss M&A market is very active and there was a significant increase in M&As (both in number and volume) from 2013 to 2014. The Swiss franc’s appreciation combined with low interest rates has already caused a wave of M&As in the private banking sector that will likely continue in 2015 (UBS Global Research, 2014a). Overall, M&A is a cyclical phenomenon that typically spikes in the top end of the business cycle when corporations accumulate a lot of cash. Given the current “corporate saving glut” (both in Europe and the US), it is expected that the M&A market will continue to be very active in the near future.

Figure 4: Number of Swiss M&A deals and their value per year (KPMG, 2015).



<sup>7</sup> In addition to highly attractive negative long-term interest rates, this issuance uses the FX swap anomaly (an apparent deviation from the covered interest rate parity): global scarcity of USD funding makes it cheaper to borrow in other currencies, and this liquidity premium is reflected in the currency swap market.

## The Swiss Structured Products Market

According to the Swiss Structured Products Association (2015), in December 2014 there were about 32,000 different structured products quoted on the SIX Swiss Exchange. As of December 2014, the largest issuers in the Swiss market were UBS (34% of the market), Bank Vontobel (20% of the market), ZCB (15% of the market), and Credit Suisse (5% of the market). As of October 2014, Swiss banks were holding CHF 202 billion in structured products, which constitutes close to 4% of all money deposited at Swiss banks. Structured products were mostly held by institutional investors (68%), followed by private investors (27%), and commercial clients (5%). The CHF 200 billion holdings are of course way below the numbers from the structured products and securitization boom that took place directly before the crisis: in 2007, total holdings by Swiss banks were close to CHF 350 billion. During and after the crisis, structured products experienced a huge outflow of capital, and holdings decreased monotonically, reaching CHF 158 billion in October 2013. However, since then, investor sentiment has been steadily rising and holdings have been monotonically increasing, reaching CHF 202 billion in October 2014 (Swiss Structured Products Association, 2015). Assuming that this trend continues in the near future, one might expect holdings to grow by about CHF 2–3 billion per year.

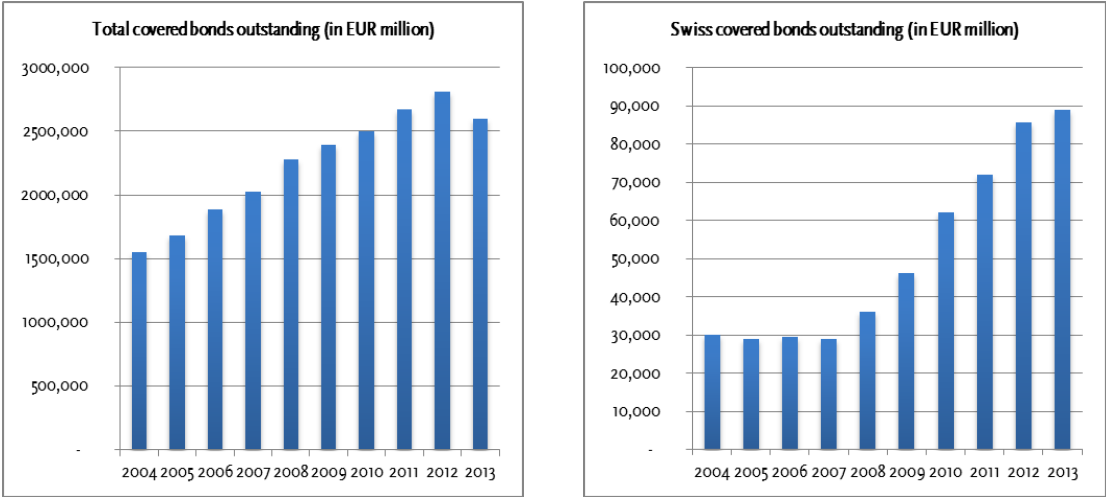
As is true for most other areas of investment banking, the market for structured products has experienced a true digital revolution over the last few years. The standard business model in which bespoke, client-specific structures were created through a direct interaction with the client's bank has been to a large extent replaced by centralized trading. While many structured products are traded on regular exchanges (such as the SIX Swiss Exchange), there is also a new type of exchange that has been created specifically for trading these complex instruments, so-called multi-issuer platforms. The idea of these platforms is that a client may create bespoke structures online, and then request quotes from multiple participating banks. In this way, the standard opaque market structure is replaced by a much more transparent one. Recent regulatory concerns [see, e.g., Binham and Chon (2015)] suggest that the old single-issuer model might be subject to significant regulatory pressure in the near future.

There are multiple structured product platforms in Switzerland. The market shares of Swiss exchange-listed structured products are distributed across these trading platforms as follows: Vontobel (22.9%), Leonteq (21.2%), UBS (14.3%), ZCB (9.9%), and Credit Suisse (9.7%). The two market leaders, Vontobel and Leonteq, have very different business models. Vontobel runs deritrade, a leading multi-issuer platform, with many large banks (including Deutsche Bank, Morgan Stanley, Société Générale, and UBS) participating. Leonteq is a FinTech enterprise and the only firm in the world specializing exclusively in structured products. In addition to issuing their own structured products, Leonteq runs its own "white labeling" business, whereby it offers its infrastructure platform to third parties (banks and insurance companies). The competition between these two Swiss market leaders, Vontobel and Leonteq, will eventually show which business model will become the dominant one in the future of structured product markets.

### Securitization in Switzerland

Prior to the most recent financial crisis, securitization was booming in many parts of the world. In particular, commercial mortgage-backed securities (CMBS) conduit lending became popular and Swiss assets were included in many CMBS conduits that were active on a European level (Bürigi, Kroll, and Wieser, 2006). Despite several attempts to expand securitization activities to credit card receivables, auto leases/loans, and other asset classes, the business was mainly limited to residential mortgage and commercial real estate securitizations and to trade receivables securitizations. Following the crisis, securitization activity in Switzerland collapsed, largely due to regulatory and social pressure related to insufficient “skin in the game” and the “originate-and-distribute” model. In response to these changes, the European securitization market has been dominated by covered bond transactions in recent years. While both covered bonds and mortgage-backed securities give investors access to pools of mortgages or loans, in the case of a covered bond transaction these loans stay on the issuer’s balance sheet, implying that the issues related to “skin in the game” do not arise.<sup>8</sup> Figure 5 shows the evolution of covered bonds outstanding over the last ten years. Note that the Swiss covered bond market has been growing a lot in recent years despite the issuance stamp duty that had to be paid on the issuance of bonds prior to the TBTF banking act that came into force on March 1, 2012. Now that the issuance stamp duty has been abolished, it is expected that Swiss covered bond transactions will continue to grow even further.

Figure 5: Covered bonds outstanding (European Covered Bond Council, 2015).



Apart from MBS, the Swiss ABS market has recently seen a number of new transactions securitizing new asset classes in Switzerland. There have been several auto lease ABS transactions, backed by Swiss auto lease portfolios: For example, a private conduit transaction arranged by Lloyds TSB Bank plc through an asset-backed commercial paper (ABCP); an ABS transaction by GE Money Bank AG

<sup>8</sup> A synthetic ABS is an exception: in a synthetic transaction, loans remain on the bank’s balance sheet.

(the bank issued CHF 200 million of ABS that were afterwards listed on the SIX Swiss Exchange); and a CHF 300 million ABS transaction backed by BMW Group vehicle lease assets. One can also mention several Swiss credit card ABS transactions that were backed by pools of credit card receivables originated by Credit Suisse and Swisscard (Bürgi, Wyss, and Müller, 2013). While the Swiss market of auto-lease and credit card ABS is only starting to develop, there is a significant growth potential and more transactions can be expected in the near future.

### **Swiss Franc Appreciation**

On January 15, 2015, the Swiss National Bank decided to abandon the euro cap. In response to this dramatic event, the shares of the three largest publicly traded Swiss banks experienced a large drop: UBS was down 12%, Credit Suisse 17%, and Julius Baer 18%. The fact that the shares dropped is not surprising per se because Swiss banks incur a large part of their costs in Swiss francs while a large portion of their profits is generated either abroad or in other currencies. Interestingly, the shares of all three banks essentially recovered to their pre-January 15 (and above) levels afterward. While it is difficult to compute the exact magnitude of the effect on future earnings, several estimates based on different assessments will now be discussed. For example, in its report for the third quarter of 2014, Credit Suisse mentioned that a 10% move in the EUR–CHF exchange rate would affect profits for the first nine months of the year to the tune of CHF 180 million (or 8%), while a 10% change in the USD–CHF rate would have a CHF 277 million impact. Based on company reports, Citi Research estimates that the franc's appreciation will decrease 2016 profits before taxes for Credit Suisse, UBS, and Julius Baer by 8%, 7%, and 10%, respectively (Verma, 2015). Furthermore, for some banks the proportion of capital in Swiss francs is not the same as the proportion of assets in Swiss francs. As a result, the franc's appreciation may actually boost capital ratios. For example, according to recent estimates, the current Swiss franc appreciation will lead to an increase in the UBS CET capital ratio (see the following section) and leverage ratios of about 17-18 basis points (Verma, 2015).

### **Regulatory Changes and their Implications**

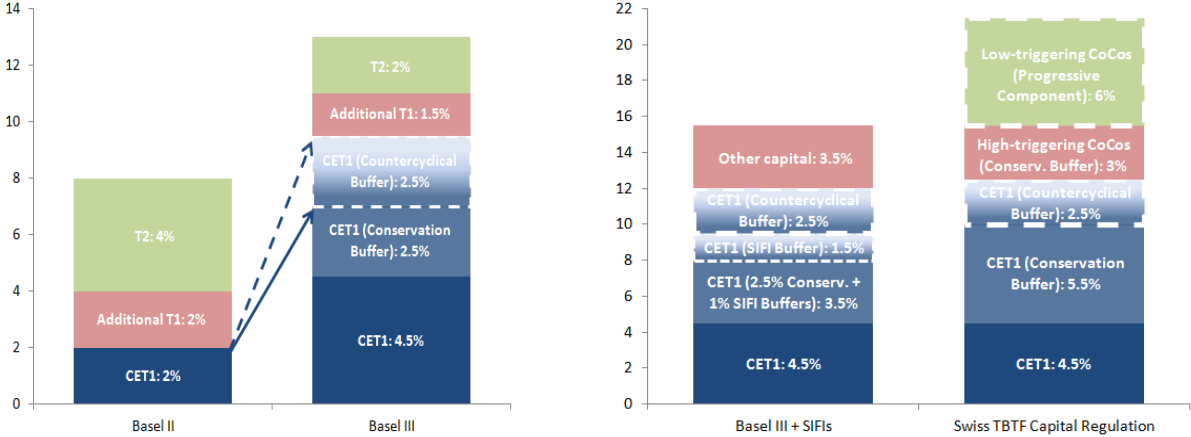
After the most recent financial crisis, the Basel Committee on Banking Supervision (BCBS) decided to reform its recommendations for the prudential regulation of international banks. The result of this reform is the Basel III set of recommendations, which is supposed to gradually replace Basel II. See, for example, Hildebrand (2008), FDIC Press Release (2013), Institute of International Finance (2011).

#### **Switzerland—Capital Requirements**

Swiss regulators decided to go further and introduce even more stringent regulations for Swiss banks. These additional regulations are often referred to as the “Swiss Finish on Basel III”. Major capital requirements are formulated in terms of common equity tier 1 (CET1) capital and tier 1 (T1) and tier 2 (T2) capital and are more stringent for systemically important financial institutions (SIFIs).



Figure 6: Capital requirements under Basel II and Basel III regulatory regimes as a percentage of risk-weighted assets (RWA), and capital requirements under Basel III and the Swiss regulation for systemically important (TBTF) banks as a percentage of RWA (Rochet [2014]<sup>9</sup>).



Basel III rules were transposed into Swiss law and are to be phased in over a period extending to the end of 2018. In addition to the basic capital requirements of the Basel III framework, the Swiss Financial Market Supervisory Authority (FINMA) Circular 2011/2 introduced additional capital requirements for the largest Swiss banks (the so-called Swiss Finish). According to this additional requirements, the three systemically important banks (UBS, Credit Suisse, and ZCB) must hold capital of at least 19% RWA (compared to the 13% capital requirement under Basel III for SIFIs). Non-systemic banks need to hold up to 3.9% of additional capital on top of the Basel III 10.5% requirement. In addition, there is some political pressure to increase the 3% minimum leverage ratio (defined as the ratio of T1 capital to total exposure) of Basel III to 6% or even 10%. Thus, despite being already quite stringent on the international level, Swiss regulations could become even more stringent. In 2013 the Swiss Federal Council appointed a group of experts led by Professor Aymo Brunetti (University of Bern) to make recommendations for future development of the Swiss financial sector. According to UBS Global Research (2015), recommendations made by this group (the “Brunetti Report”) suggest that the Swiss tier 1 leverage ratio might rise from 3.12% to 4.5%. The biggest debate between regulators and the industry concerns the calculation of RWA. According to UBS Global Research (2015), the regulatory capital framework might be moving from a static to a dynamic approach (with a move from a focus on CET 1 to stress tests that give regulators an additional powerful tool for regulating bank risk taking) and from an internal model-based RWA calculation to standardized models such as the 80% floor introduced in Norway (see Plossner and Santos [2014] for a recent empirical investigation.) For signaling purposes, some banks may even decide to hold capital above the minimum requirements as a sign of financial strength. UBS Global Research (2014b; 2014c) discuss the possible developments in future RWA calculations and their

<sup>9</sup> Figures set within a dashed white line are the maximum of a variable requirement of which the minimum is 0%. T1 equals CET1 plus additional tier 1 capital.

potential effects, but many industry participants believe that regulation will stop all statistical model-based calculations and will use simple, robust rules instead.<sup>10</sup>

Another important new regulation concerns the so-called total loss-absorbing capacity (TLAC) for global systemically important banks (G-SIBs): the FSB recently issued TLAC standards in which banks are required to hold loss-absorbing debt & equity equivalent to 16%–20% of RWAs. This ratio could eventually go up to 25% or even higher. These new TLAC requirements beyond current fully-loaded total capital levels could be up to USD 1.5 trillion (US and Europe). UBS Research estimates that the negative impact on 2016 profits could be up to 4%.<sup>11</sup>

Overall, the expectation is that new capital requirements will force RoE to decrease significantly, by about 5–7%. In order to build necessary capital, banks may have to enter into asset sales, cut dividends, and reduce bonus payments and base salaries. This may in turn imply that talented employees might start leaving investment banking.

## **Contingent Convertibles**

While the 19% capital requirements are quite restrictive, Swiss regulators have said that up to nine percentage points of the new capital buffer could come from contingent convertible capital instruments—widely nicknamed “CoCos”. By definition, CoCos are bonds that convert into equity contingent of an event, specified in the contract (for example, when a bank’s capital ratio falls below a certain threshold). Given the current pressure to introduce even higher capital requirements for SIFIs, CoCos could be the perfect instrument for raising this additional capital. This could eventually imply a global CoCo market of the order of several hundreds of billions of USD.

While the proposal to use CoCos was initially met with skepticism by banks, regulatory pressure has forced many banks to issue CoCos over the last few years. One of the pioneers of this trend has been Credit Suisse: the bank started with a private issue of the equivalent of CHF 6 billion of CoCos

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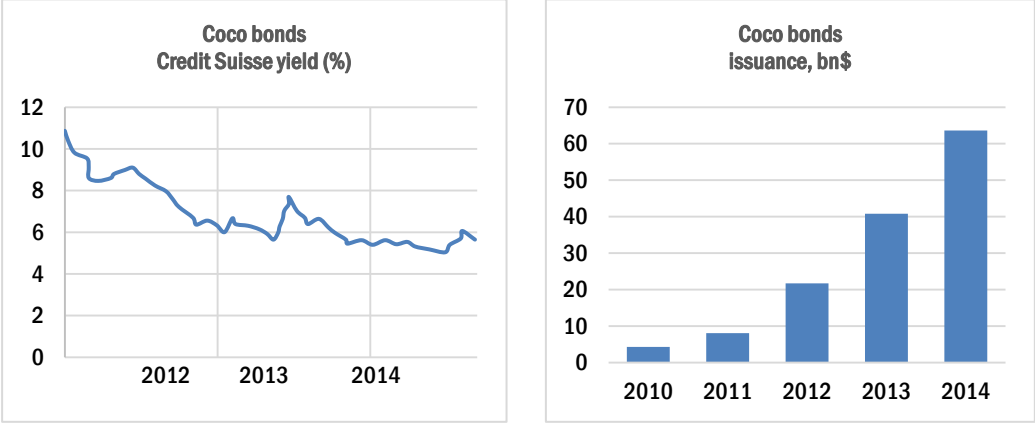
<sup>10</sup> Overall, there is no consensus in the academic literature on whether high leverage is indeed optimal for banks. For example, Admati and Hellwig (2013) and Admati, DeMarzo, Hellwig, and Pfleiderer (2011) actively advocate high capital requirements for banks. At the same time, DeAngelo and Stulz (2014) show that high leverage is optimal for banks due to their liquidity production functions. Plantin (2014) shows, theoretically, that banks are subject to capital requirements because their privately optimal leverage is higher than their socially optimal one. Hugonnier and Morellec (2014) show that regulatory requirements affect bank behavior even when such requirements are not binding, while liquidity requirements have no long-run effects on default risk but may increase default risk in the short run. See also Modigliani and Miller (1958), Bossone (2000), Baker and Wurgler (2002), Drucker and Puri (2006), Morrison and Wilhelm (2007), Avgouleas (2009), Borio and Drehman (2009), Haldane (2010), Kashyap, Stein, and Hanson (2010), Herve et al (2010), Monnin and Jokipii (2010), Hansen (2012), Laeven and Valencia (2012), Brunnermeier, Dong, and Palia (2012), Miles, Yang, and Marcheggian (2012), Baker and Wurgler (2013), Rochet (2010, 2014), Becker and Newton (2013), Vanini and Broumandi (2013), Birchler and Jackson (2013), Brun, Fraisse, and Thesmar (2013), Ratnovski (2013), Acharya and Steffen (2014), Benos, Garratt, and Zimmerman (2014), Acharya, Engle, and Pierret (2014), Denbee et al. (2014), Mancini, Rinaldo, and Wrampelmeyer (2014), Martin, Skeie, and von Thadden (2013), and Acharya and Tuckman (2015).

<sup>11</sup> One should not forget that new capital requirements will supposedly reduce the likelihood of crises and will therefore (hopefully) have an aggregate positive effect on the economy. Recent findings (Fahlenbrach, Prilmeier, and Stulz [2012] and Beltratti and Stulz [2012]) provide support for these “crisis prevention” considerations.

denominated in Swiss francs and US dollars (the buyers were Qatar Holding LLC and The Olayan Group), but then made several large public issues. Figure 7 shows the dynamics of the CoCo markets over time. As one can see, CoCo yields have fallen significantly over time, making them a cheap source of funding. In addition to falling interest rates, this effect is driven in part by banks' growing balance sheets. Overall it suggests that investors are bullish about CoCos, and hence even more issuances can be expected. This is confirmed by Figure 7: CoCo issuances have grown from almost zero in 2010 to more than USD 65 billion in 2014. In Switzerland, Credit Suisse has issued CoCos to the value of USD 9.5 billion + EUR 1.7 billion + CHF 1.1 billion; UBS has issued CoCos to the value of USD 5.5 billion; Julius Baer has issued CoCos for CHF 270 million; and Glarner Kantonalbank has issued CoCos for CHF 77 million.

CoCos are clearly beneficial for investment banks as they offer a relatively cheap source of capital and have a high potential for mitigating the new stringent capital requirements. Thus, the expectation is that these instruments might become a significant part of investment banks' capital structure in the future.<sup>12</sup> This may in turn have important implications for such banks' investment policies. For example, Abdul, Tchisty, and Jaffee (2013) show that CoCos can increase a firm's value and reduce the chance of costly bankruptcy or bailout if properly implemented. At the same time, they find that CoCos can also create incentives to manipulate the stock market when their conversion value is too low or too high. The actual effects of CoCo-based recapitalization on investment banks' behavior are yet to be evaluated (see Avdjiev, Kartasheva, and Bogdanova [2013] for a recent analysis of the CoCo market.)<sup>13</sup>

Figure 7: CoCo-bond statistics (Schmid, 2014; Glover and Beardsworth, 2014).



<sup>12</sup> There is an increasing interest from institutional investors in this asset class. For example, many pension funds are now investing in convertible bonds. See, e.g., <http://www.adventcap.com/sites/all/files/advent/Global%20Pensions%20-%20Convertible%20Bonds%20in%20Ascension%200909.pdf>

<sup>13</sup> While the global upward trend is quite strong, the Swiss CoCo market has not been very active recently and some market participants believe that the Swiss CoCo trend is over.

## OTC Derivatives

New capital requirements will have profound effects for OTC derivatives markets due to the counterparty credit-risk (CCR) charge that will—in 2017—increase by a factor of 2.5. This is going to be a joint effect of the credit-valuation adjustment [CVA] charge for OTC derivatives that are not centrally cleared, plus the effect of correlation multipliers. However, new regulations will also force trading in most of the existing OTC derivatives to go through a central clearing counterparty (CCP). This will effectively move the CVA charge to the CCP, and as a result will lead to an increase in the return on equity (ROE). At the same time, margins for centrally cleared products will drop by 40–50%. Some estimates from McKinsey&Company (2014) of the magnitude of these effects on ROE for different asset classes are summarized in Table 6. It is clear from this table that some of the businesses (e.g., structured rates, structured credit, proprietary trading) may effectively stop functioning, while others will only survive if the existing business models change completely. For example, in the fixed-income markets banks have essentially stopped holding inventory and transformed the business into a pure agency model matching buyers and sellers directly.

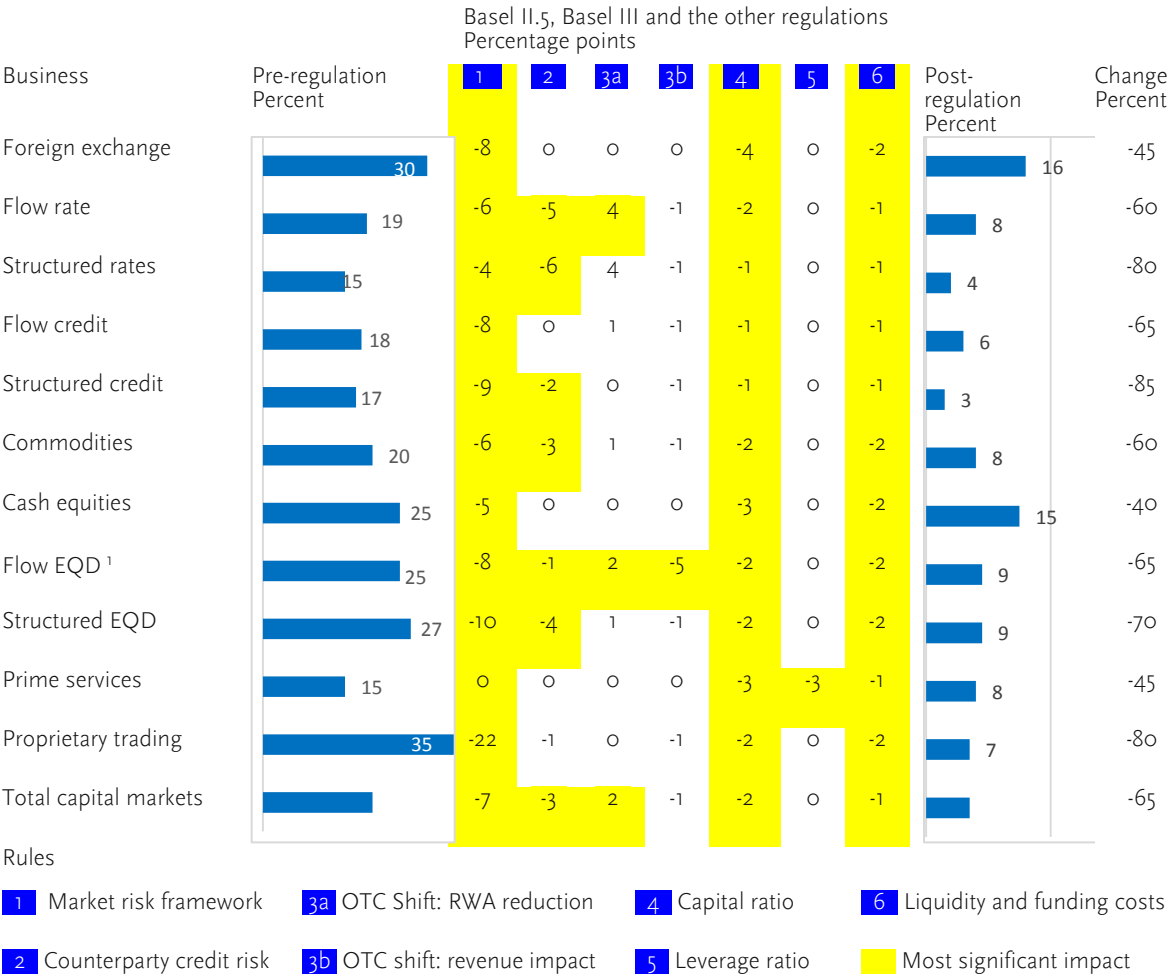
To summarize, capital requirements will lead to a major drop in bank lending to the real sector and corporate hedging using uncollateralized OTC derivatives will experience a major drop in volumes. Firms will be forced to rely on capital market financing and/or direct borrowing from non-bank institutions (shadow banks).

## Leverage and Liquidity

In addition to capital requirements, Basel III imposes constraints on

- The *Leverage ratio*, defined as the quotient of tier 1 capital to the bank's average total consolidated assets (not risk weighted). While Basel III imposed only a 3% leverage ratio requirement, in July 2013 the US Federal Reserve announced that the minimum Basel III leverage ratio would be 6% for 8 SIFIs (BoA Merrill Lynch, Bank of New York Mellon, Citigroup, Goldman Sachs, JPMorgan, Morgan Stanley, State Street, and Wells Fargo) and 5% for their insured bank holding companies. Implementing this may be non-trivial: according to UBS Global Research (2014d), the capacity for cost reductions at major investment banks has been largely exhausted.
- *Liquidity requirements*. Basel III introduced the "liquidity coverage ratio" (LCR) (defined as the value of liquid assets divided by the total expected cash outflows minus total expected cash inflows over 30 days), which has to be above 60% as of 2015, and will have to be above 100% after 2019. After 2018, lower bounds on the net stable funding ratio (NSFR) will become part of the regulatory requirements. Namely, banks will have to hold an available amount of stable funding that is higher than the required amount of stable funding estimated over a one-year period under an extended stress scenario. Some national governments have gone further and significantly sharpened the definitions of these two ratios.

Table 2: Return on equity before and after regulation.



<sup>1</sup>Equity derivatives  
Source: McKinsey&Company, 2014.

Together with derivative trading through CCP, liquidity requirements (LCR and NSFR) will make collateralization a major concern. The scarcity of collateral will lead to large liquidity distortions in the market. CCPs will start playing a major systemic role in the global economy, concentrating huge derivative exposures and collateral pools.

**Europe—MiFID and MiFIR**

In 2014, the European Parliament accepted two new elements of the European law that will shape the future of European financial markets: the Markets in Financial Instruments Directive II (MiFID II, a major revision of MiFID I of 2007) and the Markets in Financial Instruments Regulation (MiFIR) that amends the older European Market Infrastructure Regulation (EMIR). The main new regulatory aspects embodied in these measures are: (1) the introduction of organized trading facilities (OTFs), a slightly less regulated version of a multilateral traded facility (MTF); (2) the requirement that all standardized OTC derivatives must be traded on a regulated market (RM), an MTF, or an OTF; (3)

pre-trade and post-trade transparency reporting requirements that evolved from MiFID I will now be extended to many other instruments, including derivatives that were earlier traded as OTC—RMs, MTFs, and now OTFs will have to report on a continuous basis the current bid and offer prices and information regarding the depth of trading interest; (4) stricter regulation of high-frequency and algorithmic trading.

One major implication of MiFID II and MiFIR is that they will force brokers to turn dark pools into MTFs, removing many dark pool advantages. This will also reduce barriers to entry and increase competition for trading volumes. MiFID II and MiFIR will also have a significant impact on high-frequency trading and automated trading volumes.

## **Bank Separation**

After the most recent financial crisis and the subsequent collapse and public bailout of several major banks, many governments decided to develop regulatory tools to limit the potential consequences of another crisis. One major common theme of these regulations was *bank separation*—that is, separating trading activities from deposit taking. In this section, several regulatory proposals for bank separation and their potential consequences will be discussed.

*Dodd–Frank Act and Volcker Rule.* In brief, The Dodd–Frank Act<sup>14</sup>

- Concerns all US banks (defined as deposit-taking institutions);
- *Prohibits* “proprietary trading” (defined as any short-term trading activity) and maintaining an interest in hedge funds and private equity funds (Volcker Rule);
- *Allows* trading (some) government bonds; underwriting; liquidity management; and some trading activities outside the US;
- A *swaps push-out rule* prohibits swaps dealers from accessing the Federal Reserve’s discount window or FDIC deposit insurance.

Under the Dodd–Frank Act, if a financial institution wanted to trade derivatives, this activity would have to be completely isolated (“ring-fenced”) from the bank. For example, in order to comply with this rule, JPMorgan would probably have to move its derivatives holdings to its broker-dealer unit, JPMorgan Securities LLC. Such a move would have three major consequences for the investment bank. First, the bank would lose its funding advantage from guaranteed deposits. Second, it would also lose a credit rating advantage because commercial banks are typically considered to be much less risky by rating agencies and hence need to post less collateral. As a result, commercial banks effectively face much lower borrowing costs. Third, in contrast to banks, broker-dealers are subject to different regulations and, as a result, to different capital requirements that are particularly large for OTC derivatives. For example, in the US broker-dealers are regulated by the Securities and Exchange Commission (SEC), and the SEC is still in the process of finalizing new rules, including the margin rules for securities-based swaps, which represent a very important and actively traded class of OTC derivatives for investment banks. The joint magnitude of these three effects may be quite large, and a lot of discussions are still ongoing, with banks hoping that some of the regulations can still be partially

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<sup>14</sup> See Hu et al (2010).

relaxed (Jopson and Braithwaite, 2014). Initial estimates of Standard & Poor's (2012) suggest that the Dodd–Frank Act may lead to a USD 10 billion decrease in pre-tax earnings per year for the eight largest US banks combined (Standard&Poor's, 2012). See Elliott and Rauch (2014) for a detailed discussion of the Volcker Rule and its consequences.

*Vickers Commission proposal* (UK). The UK followed the US with the introduction of the Vickers Commission proposal (Vickers Commission, 2013), which was included in the UK Financial Services Act of 2012. In brief,

- It concerns all UK banks with over GBP 25 billion of deposits from European Economic Area (EEA) SMEs and individuals.
- Only deposits are allowed to be inside the ring-fenced entities, and these entities are prohibited from trading as principals in any financial instruments and commodities. Ring-fencing will be fully legally enforceable as of January 2019.
- Ring-fenced entities are allowed to trade “simple” derivatives, securitizations of own assets, and debt-equity swaps, and perform own risk and liquidity management.
- Regulators will most probably require a sibling structure whereby ring-fenced and non-ring-fenced banks belong to the same holding company. Both types of entities are regulated as banks, with high loss absorbency capital requirements.

Overall, UK regulation resembles US regulation fairly closely. There are, however, important differences. First, UK regulation only concerns relatively large banks (the TBTF problem), while the US Dodd–Frank Act concerns all banks. Second, the UK regulations completely prohibit market making for ring-fenced retail banks, while the US regulation only prohibits proprietary trading and complex derivative trading; deposit takers in the US may continue their market-making activities. These very strict ring-fencing rules may have profound negative effects on UK investment banks and may force UK banks to significantly scale back their investment banking activities. Standard & Poor's recently mentioned that ring-fencing would lead to a very large increase in funding costs for UK banks. Ring-fenced investment banking divisions might suffer from a significant drop in their credit rating, all the way to BB-, below what is commonly viewed as investment grade. In addition, the requirement of having separate subsidiaries for ring-fenced and non-ring-fenced activities will require having multiple boards and as a result may potentially lead to a duplication of many of the banking activities. Ultimately, banks will probably pass on these costs to customers, and hence the overall consequences for societal welfare are unclear.

*Liikanen Report*. In 2011, the European Commission set up a High Level Expert Group chaired by Erkki Liikanen, governor of the Bank of Finland. This group issued a final report in 2012 that combined key features of the US Dodd–Frank Act and the UK Vickers Commission proposal. The Liikanen Report emphasized that, in addition to existing reforms, complementary bank restructuring is needed. In 2013, the European Parliament adopted its own initiative—“Reforming the structure of the EU banking sector”. In outline,

- The regulation concerns EU G-SIBs, EU credit institutions or groups that contain a credit institution, and branches of non-EU credit institutions with total assets exceeding EUR 30 billion and total trading activity exceeding EUR 70 billion or 10% of total assets.
- Institutions with assets and trading activity exceeding the above thresholds are prohibited from proprietary trading and investing in alternative investment funds.

- They are allowed to trade EU government bonds, perform cash management activities, and invest in specific types of funds.
- Most trading activities (the choice of which remains at the discretion of the appointed national supervisor) must be ring-fenced, but special attention is given to market making, complex securitization, and complex derivatives.
- Groups subject to ring-fencing must be structured as “functionally homogeneous subgroups”—an analog of the sibling structure in the UK regulation, whereby deposit takers and trading entities are parts of one holding company. Proprietary trading will be legally banned as of January 2017, and bank separation will be in power as of July 2018.

As in the UK, these regulations concentrate on large (TBTF) banks, and all trading activities including market making will most probably be prohibited for deposit-taking institutions (though there is some discretion left to the supervisor). One obvious consequence of these “ring-fencing” regulations, a consequence that is actively discussed in the EU Commission report, is that large parts of banking activities will be driven toward “shadow banking”, which might be much harder to regulate. The European Commission is now working on introducing additional regulations for shadow banking.

The main motivation for introducing ring-fencing measures for banks was to decrease systemic risk and reduce excessive risk taking. However, as any other strict regulation in an inherently interconnected and globalized world, the rule will naturally have other important consequences for the functioning of financial markets, and the overall impact it will have on societal welfare is far from obvious. There is also a significant probability that some of the major details of the rule will be reconsidered after regulators have been able to evaluate its true consequences for the economy.

The first anticipated consequence of the Volcker Rule is that banks may either completely retreat from or significantly reduce their market-making activities: banks will face implementation costs to convince regulators that they are practicing market making and not prop-trading, and they will not be able to profit from speculation combined with their market-making activities. This may lead to lower liquidity, higher volatility, and higher transaction costs, which may have large negative effects both for retail investors and for the corporate sector. For example, several investment banks have argued that the violent swings in US government bond prices in October 2014 were largely due to the reduced liquidity provision by major banks, which are no longer willing to act as shock absorbers (Braithwaite and Rodrigues, 2014). The famous story regarding the failure of the merger of AbbVie and Shire is another illustrative example of how hard it is to distinguish market making from proprietary trading activities: Several major banks including Citigroup, Credit Suisse, Barclays, and Goldman Sachs suffered significant losses from holding large positions in Shire stock when AbbVie decided to withdraw its offer for Shire, and Shire’s share price dropped. This led to significant discussions in the press, as many bankers said it was unusual to hold such a large exposure to a single company in a takeover situation solely for market-making purposes (Johnson and Arnold, 2014). In addition to the prop-trading ban, all of the abovementioned regulations require the largest banks to report information on risk and position limits, risk factor sensitivities, inventory turnover, and other metrics, imposing high compliance costs. Overall, banks might also become less diversified (because they will simply stop holding some types of securities) and less profitable.



## Technological Advances (Digitalization and FinTech) and their Implications

Digitalization (including social networks, big data, mobile technologies, and interactive platforms) is quickly changing the way business is done in all sectors of the world economy, and banking is not an exception. For example, in 2013, 12.4 million people in the UK downloaded banking apps, and conducted 18.6 million transactions a week on their mobile phones, which is more than twice the number of transactions conducted in 2012, according to the British Banking Association (2014). Electronification is a major trend in modern financial markets trading. The need for major reforms in the organization of trading seems to be widely acknowledged by investment banks. For example, total global bank IT spending grew to USD 188 billion in 2014 (an increase of more than 4% against the 2013 figure) according to Lodge, Zhang, and Jegher (2015), but this was not enough to catch up with the competition in the shape of FinTech innovators. The following are the major inefficiencies in the classical investment banking model that encourage FinTech entrepreneurs to seek out digital improvements:

- *Oligopolistic industry structure*—Large banks dominate the markets and create barriers of entry for small players; they exploit their central positions in the customer network, which allows them to extract high intermediation rents.
- *Over-the-counter deal making* constitutes a large part of investment banking revenues. These are “dark markets” that are highly non-transparent and keep clients in the dark about prices and transactions.
- The *classical sales model* that targets a small number of high net worth clients and functions through direct client relationships is not scalable and cannot accommodate the growing demands from retail clients.
- *E-commerce* has become prevalent in most asset classes and operates through four major channels—single-bank platforms (e.g., FX trading screens), multi-bank platforms (e.g., Tradeweb, Bloomberg, OMGEO CTM), direct payments, and mobile services. However, these four channels are essentially invisible to one another. In addition, in an overwhelming majority of cases, platforms offered by investment banks focus on research and execution for a specific asset class. As a result, a typical investment bank overloads its clients with a large variety of user interfaces and platforms; this is both inefficient and confusing.

Banks are well aware of these problems and are trying to address at least some of them. Two important recent examples are the UBS Digital Investment Banking platform (UBS Neo), which fully integrates all research and all asset classes in a single scheme, and the recent introduction of Digital Private Banking by Credit Suisse.

But these are not the only developments that are changing the way business is done. There follows a discussion of several other new financial technologies that have the potential to significantly alter business models.

*“Electronification” of fixed income trading.* Large capital requirements have had a profound impact on the corporate bond market: Marsh (2015: para. 5) states: “Bond trading has declined about 70 percent since 2008, according to Royal Bank of Scotland Group Plc. Liquidity has all but disappeared for some securities in Europe as a result of the banks’ reduced inventories, according to the International Capital Market Association”. Since corporate bonds are inherently illiquid (largely due to different covenants and a lack of standardization), “electronification” has been progressing slowly. According to

Bech, Illes, Lewrick, and Schrimpf (2016), the share of electronic trading in fixed income rose from 35% in 2007 to 45% in 2014. This is obviously too slow given the abovementioned drop in liquidity. Several new, centralized trading venues (platforms) have been introduced, including that of the SIX Swiss Exchange, which is launching a new corporate bond trading platform in 2015. However, overall, fixed income is only slowly catching up with other asset classes in terms of modern technologies (Mainert, Aaten, and O'Flynn, 2014). Some investment banks are now offering alternative solutions. Here, it is worth mentioning the recently introduced UBS Price Improvement Network in Fixed Income (UBS PIN-FI), named "Algomi", which has introduced novel, cutting-edge technologies for bond trading. The key innovation is pre-trade transparency, which allows traders to see relevant past inventory movements for several banks in order to identify the best counterparty.

*Crypto-currencies.* Electronic currencies are gaining popularity, in particular because of their ability to facilitate very cheap real-time international payments. Starting with bitcoin, the world of crypto-currencies is growing and now includes numerous alternatives such as OpenCoin, Litecoin, Namecoin, Feathercoin, SolidCoin, WebMoney, and Ven, to name but a few. Crypto-currencies are becoming particularly popular in emerging markets: according to Jana, a mobile-payments company with more than 2 billion clients based in emerging markets, about 60% of their clients would feel comfortable investing in a virtual currency, and in many emerging-market economies clients consider crypto-currencies a safer long-term bet than stocks and real estate. This suggests that crypto-currencies are gaining importance as a new asset class. Investment banks should seriously consider introducing bitcoin. The recent introduction of bit-coin-backed derivatives by Coinarch (an online trading platform based in Singapore) shows a clear need for investment banking products in virtual currencies. Many major Wall Street banks are already trying to understand this market. So far, Bank of America, Morgan Chase, Citigroup, Goldman Sachs, and Wells Fargo have published reports for clients on bitcoin.

*Big Data.* The challenging amounts of data that modern banks are facing are commonly known as "big data". The idea is to have the ability to compute real-time linkages and correlations between financial markets, the real economy, social networks, etc. While initially left behind by computer technology firms, some (but still very few) investment banks have now realized the importance of big data and are now catching up. For example, Goldman Sachs has invested USD 15 million in a big data analytics start-up, Kensho; Deutsche Bank has appointed several senior managers with knowledge in the field; and Banco Bilbao Vizcaya Argentaria (BBVA), a multinational Spanish banking group, has acquired a Spanish big data analytics start-up, Madiva.

*International money transfer and payment systems.* Many clients (both retail and corporate) face problems with international money transfers: banks typically charge high fees and are often slow in processing transactions. FinTech innovators use mobile technologies (e.g., social networks such as Facebook) to make international money transfers cheaper, quicker, and more convenient and secure. Examples include WorldRemit, Moni Technologies, Azimo, and TransferWise. Similar innovations exist in terms of online payment systems (Pingit, Photopay, Zapp, Paym). Pingit (which belongs to Barclays) is an important example of a major universal bank developing a successful in-house FinTech enterprise.

The new European SEPA regulation is designed to precisely address the abovementioned inefficiencies, and has encouraged many international companies to start the process of centralizing

their transfers. As an example of disintermediation, such centralization seriously threatens the classical transaction banking model. For example, Deutsche Post and DHL have consolidated payments and collections globally, with almost no banking intermediation involved. Once corporates decide to massively offer these capabilities to other firms (for example, as a white-labeled service), transaction banking—the way we now know it—may simply disappear.

*Asset and investment management* has traditionally been largely inaccessible to retail clients and has mostly targeted institutions and high net worth individuals. New FinTech start-ups are bringing asset management to retail (and not only retail) clients by allowing them to easily manage their investments online using data visualization, analytics, and user-friendly mobile applications. Different start-ups are trying to target different clientele. For example, Nutmeg helps to manage investments for a particular goal, while Rplan helps clients manage risk. A famous Swiss success story is Swissquote, a market leader in private e-banking. Swissquote has developed several platforms where clients can trade, form portfolios, and use advanced in-house analytical tools to compute an optimal investment profile.

*White labeling* of trading software, platforms, and other additional services is another important technology trend in investment banking. This movement initially began with independent FX brokers. For example, the independent broker Gain Capital white-labeled their ForexTrader PRO and MetaTrader 4 platforms. However, investment banks are slowly starting to participate in this new technology. For example, CitiFx Pro (the retail forex trading division of Citibank) uses Saxo Bank's platform, while HSBC is going to white label Oanda's fxTrade platform with the goal to offer retail trading to its Hong Kong-based clients. In addition to HSBC, Oanda is also providing its services to several other investment banks, including RBS (Espionage, 2012). These developments also highlight the ongoing consolidation trend in the retail forex trading industry.

*Peer-to-peer lending and crowdfunding.* Another important FinTech trend in disintermediation is “peer-to-peer” (P2P) lending and crowdfunding. After being pioneered in the UK ten years ago, P2P grew very fast after the most recent financial crisis as banks scaled back lending: two of the largest P2P lending platforms—Prosper and LendingClub, founded in 2005 and 2006, respectively—have generated over USD 6 billion in loans to date, and their growth potential is quite large given the USD 3 trillion consumer debt market. The landscape of this market segment is changing fast: most P2P lending platforms now have numerous actively participating institutional investors. Investment banks are starting to realize the growth opportunities of P2P lending: instead of letting this become a facet of the disintermediation trend, some investment banks are now trying to use it as a “digital intermediation platform”. For example, according to Jenkins and Alloway (2015), Société Générale and Goldman Sachs are among several investment banks that are discussing a plan to back Aztec Money, a P2P lending platform, and Royal Bank of Scotland (RBS) has struck a deal with two P2P platforms. While P2P platforms concentrate mostly on consumer credit, several similarly structured platforms offer crowdfunding possibilities for small and/or newly launched companies. Here, they are directly competing in what traditionally were venture capital activities. The market however is still non-mature and offers large growth opportunities if large banks decide to enter. There is also an important link between P2P lending and crowdfunding platforms and the securitization market: they could in theory yield trillions of dollars' worth of collateral for securitization. This is particularly important in Europe, given the drop in ABS volumes (see Figure 9).

*Banking for intangibles.* In the classical model of collateralized bank lending, companies use their hard assets as collateral. However, the modern knowledge economy depends crucially on intangible assets, which are particularly important for innovation-intensive companies. “Snowflake” (a recently launched company created by Andre Lee, a former debt markets investment banker) plans to unveil a new type of bank that will lend to large companies against intellectual property (Lee, 2015). This is a new and original idea that might allow investment banks to enter a new territory with a new business model. As any new idea, it has high risks and high potential gains attached to it.

It is clear from the above discussion that FinTech innovations pose a serious threat to the standard model of universal banking. Unfortunately, most banks are still behaving as though they are “too big to change” and are not reacting effectively to these new challenges. To draw historical analogies, one only has to recall two recent examples: New York Stock Exchange (NYSE) and Kodak. When the Inter-Continental Exchange (ICE) was first launched in 2000 as a small electronic venue, very few people could foresee that it would overtake NYSE in 2012; most industry participants thought that the new digital business model was just something on the side. Similarly, digital photography was regarded by Kodak (the industry leader at the time) as a side business, until Kodak went bankrupt in 2012. These are typical examples of large incumbent market leaders that lost out because they could not let go of their former business models.

#### **What can the Swiss financial center do to reduce the threat of FinTech?**

- *Multi-bank portals.* Many investment banking clients have accounts with multiple banks. This decentralization is highly inconvenient and makes it hard for clients to aggregate information. A multi-bank portal that aggregates information and services across investment banks, provides consolidated access to prices and research, and consolidates client’s transactions, would be an attractive solution. Creating such a portal in Switzerland under a “Swiss” label could eventually benefit all Swiss banks as it might attract more outside capital. Of course, banks would have to find a compromise solution and differentiate themselves through specialization. The Vontobel derivate platform for structured products is a great example of a digital transition from an opaque OTC model to a more competitive multi-bank platform.
- *Transaction data transparency.* Traditionally, aggregated transaction and pricing data has given investment banks a pricing and informational advantage. Making this data more transparent will eventually lead to further disintermediation of trade. One interesting recent example is the emergence of FinTech firms that offer P2P stock lending and aggregated lending spread data. This trend will eventually lead to a decrease in fees and margins, and destroy some of the intermediation value that investment banks provide. Those banks need to react fast by digitizing their business in order to be able to deal with higher volumes and trading frequencies. Creating a Swiss data-aggregating hub that gives clients access to (some) aggregated data is an important direction to consider in Switzerland.
- *Increasing speed of access to information.* It is clear that investment banks could save large amounts of money if they had real-time access to information and the ability to manage capital needs across different lines of business and different geographical locations. Cross-product collateral management is the most natural example of this. These developments are closely related to the big data problems discussed above. The same observation can be made regarding the provision of real-time research information to clients: providing clients with access to real-

time information would significantly improve those clients' ability to make efficient portfolio decisions.

In addition, one possible response from Swiss banks to the FinTech threat would be to create in-house FinTech development incubators and accelerator spaces, following the example of the London financial center, in which several such hubs have been created and are now growing at a fast pace. In this way, Swiss banks could control and stimulate the development of the FinTech sector in Switzerland at the same time creating the right environment for promoting innovation. This movement has already begun: Temenos (a banking software company) and Polytech (a venture capital firm) have created the first FinTech incubator in Switzerland, "Fusion", which is supposed to start functioning in fall 2015. It is interesting that no Swiss bank is participating in this new start-up.

## **Global Trends in Investment Banking**

In addition to the issue of digitalization discussed above, two major channels play a part in the origins of global trends in investment banking:

- *Demand channel.* Low post-crisis growth in Europe and the very low interest rate environment, combined with the aging population, make institutional investors "hungry for yield". All this pushes them to search for alternative sources of yield. At the same time, corporates are hoarding immense amounts of cash due to the "global savings glut". All this creates demand for liquid money-like instruments and leads to liquidity premia, stimulating investment banks' liquid "money creation" through securitization activities.
- *Regulatory channel.* New regulations make it too costly for investment banks to keep loans (lending channel) and illiquid asset inventories (market-making channel) on their balance sheets. This leads to disintermediation of financing (through securitization and shadow banking) and a changing model of market making (from an inventory-based to a pure agency-based model).

These major trends will now be discussed in greater detail.

## **Securitization**

Securitization is often blamed for being one of the major causes of the most recent financial crisis. In particular, the collapse of the mortgage lending boom in the US is largely attributed to private securitizations of mortgages, which were effectively created to remove credit risk from banks' balance sheets and led to the so-called "originate-and-distribute" model. The main critique of this model was based on the insufficient levels of "skin in the game", which (as many have argued) may lead to lower underwriting standards. The large academic literature on this subject has found evidence of such lax underwriting standards [see Downing, Jaffee, and Wallace (2009); Mian and Sufi (2009); Keys, Mukherjee, Seru, and Vig (2010); and Acharya, Schnabl, and Suarez (2013)] and has proposed several contractual solutions in the form of default-contingent payment schemes to discipline mortgage underwriters (Malamud, Rui, and Whinston, 2013).

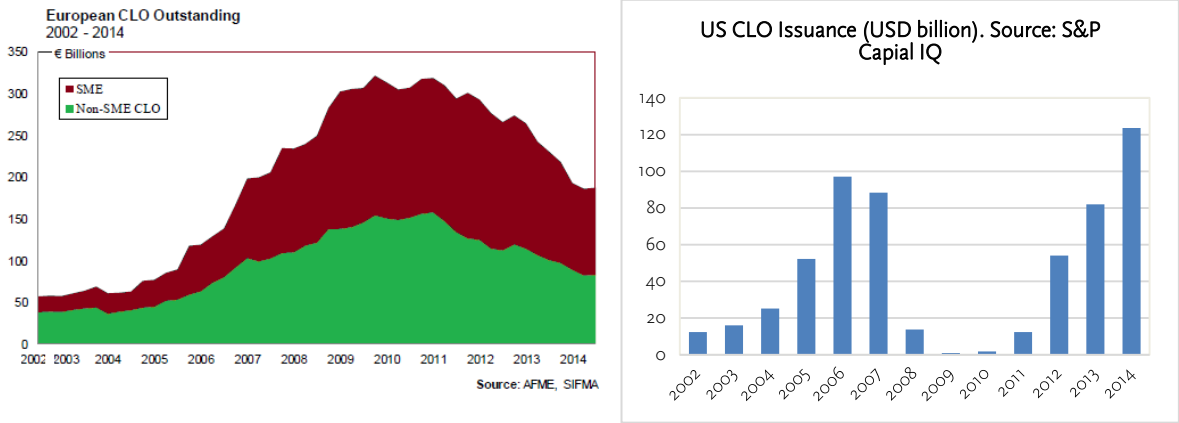
The Dodd–Frank Act of 2010 was supposed to take care of the "insufficient skin in the game" problem by imposing a minimal 5% skin-in-the-game rule, requiring mortgage originators to retain at least 5% of the default risk on their balance sheets. This requirement for the lender to keep at least 5% of the

mortgage credit risk was imposed with one exception: the risk retention requirements for the so-called qualified residential mortgages (QRMs) were set to zero. QRMs are characterized by substantial down payments that are supposed to guarantee that the risk of default is sufficiently small. However, the final version of the rule adopted in October 2014 by Congress effectively removed the down-payment requirements for QRMs (RisMedia, 2015). Thus, while QRMs do exclude some of the lowest-quality subprime mortgages (such as no-document loans, negative amortization loans, interest-only loans, and balloon-payment loans), most mortgages with zero down payments can now be officially labeled as QRMs, and their securitization can now be carried out with zero risk retention.. While the long-term consequences of this new reform for the economy are hard to estimate, the consequences for investment banking are unambiguous: The mortgage securitization market will start growing fast in the US, and serve as a new major source of revenues for investment banks. In the medium term, the US federal administration is planning an eventual exit from the securitization market by its government-sponsored agencies, in favor of the return of private interests in housing-related securitization markets. This will also stimulate investment banking activities in this market segment.

In Europe, the European Parliament also introduced "skin in the game" requirements for securitization transactions in the form of Article 122a (now Article 394) of the Capital Requirements Directive (CRD). According to SEC (2014, p. 2): "Article 394 provides that a European credit institution will suffer a punitive capital charge if it invests in a securitization transaction in which the originator, sponsor or original lender does not hold a minimum of 5% of the net economic exposure of the transaction." One very unfortunate feature of the definition of securitization in both the Dodd–Frank Act and the European CRD is that it includes independently managed CLOs. This is a specific type of ABS that are created by asset managers who use their expertise to select and purchase syndicated commercial loans in the open market. For this reason, independently managed CLOs are often referred to as open market CLOs. These CLOs "differ fundamentally from the originate-to-distribute model of securitization – this is on the basis that investment managers of open market CLOs are asset managers, who select a diversified portfolio of corporate credits across diverse industry sectors" (SEC, 2014: p. 2&3). The remuneration of these managers depends on careful credit selection, and the vast majority of open market CLO managers do not have access to the capital necessary to fund the 5% retention requirements (SEC, 2014).

New regulations, combined with the highly negative sentiment—in the post-crisis period—related to the similarities between the abbreviations CLO and CDO, led to an almost complete collapse of the CLO market during 2008–2011. However, in recent years liquidity has been returning to the secondary CLO market, largely driven by the growth of the underlying collateral pool. This is particularly the case for the US market, but the European market is also starting to recover (Figure 8). In particular, after significant lobbying, the European Banking Authority modified the rules in December 2013 with the result that asset managers could avoid retaining risks and could outsource 'skin in the game' (Unmack, 2014). Therefore, the European CLO market is expected to become significantly more active in the near future. At the same time, it is not obvious whether the US CLO market will be able to maintain its exponential growth. In October 2014, Federal Deposit Insurance Corporation (FDIC) and the Federal Reserve voted on a new CLO regulation. The exact legal details of the new retention rules are complex and lawyers are still debating their implementation, so it is not clear what the overall effect is going to be (Sherman et al., 2014).

Figure 8: CLO market dynamics (AFME, 2015; S&P Capital IQ, 2015).

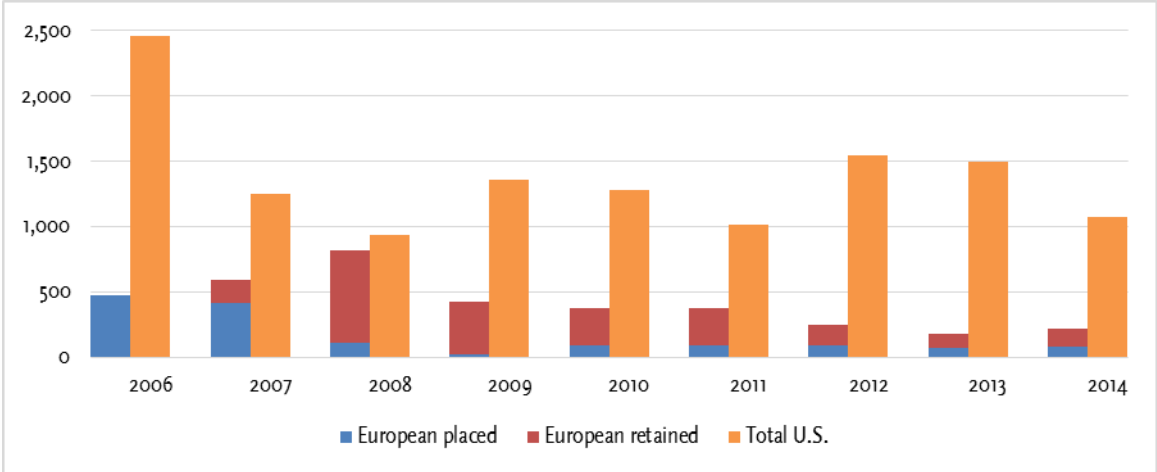


The overall post-crisis dynamics of the ABS market, both in Europe and the US, have not been very positive. This is partially driven by the proposed Basel III liquidity requirements, which limit banks' future demand for securitized products, while banks have traditionally been the largest investors in that asset class. Currently, Basel III banking regulations propose that ABS shall be excluded from the list of securities eligible for meeting the proposed liquidity coverage ratio (LCR) and the net stable funding ratio. Here, ABS comprise all collateralized securities, including mortgage-backed issues. By contrast, covered bonds and highly rated corporate bonds attract more favorable risk weightings. Since banks represent more than 30% of the securitization investor base, Basel III reforms are likely to lead to a reallocation in investor demand away from structured-finance securitization and toward covered bonds. This is a potentially positive trend for Switzerland in particular and for Europe as a whole (see Figure 5, above), and may eventually push US banks to enter the covered bonds market. Stricter capital requirements for insurance companies, contained in Solvency II, are also likely to temper investor demand for securitization. Mariathasan (2013, para. 26) states: "Capital charges for investing in residential mortgage-backed securities (RMBS) which have a 10% credit enhancement are in the range of 30–35%," says Hikmet Sevdican, managing partner at Dynamic Credit Partners Europe. "So imagine what this means. Investing in a five-year AAA RMBS security requires a 35% capital charge, while investing, not in the most senior part of the capital structure, but in the overall capital structure, requires a capital charge of only 3.5%. That's one-tenth of the capital charge for an RMBS security, even though the risk is larger." Regulators are aware of these problems and are considering the possibility of modifying the regulations in order to revive European securitization markets (Bank of England, 2014).

Figure 9 shows the dynamics of European ABS issuance over the past few years. As one can clearly see, the market scale is way below its level before the most recent financial crisis: for example, "the value of all outstanding eurozone ABS backed by loans to small businesses is only around EUR 100 billion" (The Economist, 2014: para. 5). In the US, the situation has been better but this has been largely driven by government agencies being active in the RMBS market. The ECB is planning to use its quantitative easing (QE) program to revive the ABS market and to use such a revival to stimulate lending. According to The Economist (2014, para. 6): "The ECB will struggle to buy more than EUR 100 billion a year in ABS and covered bonds, says Gareth Davies of JPMorgan." Another important

European initiative is the Prime Collateralized Securities (PCS) label for high quality securitizations: a formal label (similar to a credit rating) that could help to partially restore investors' confidence in ABS (AFME, 2012).

Figure 9: European and US ABS issuance (including RMBS and CLOs) in EUR billions (AFME, 2015).



It should also be noted that, while European pension funds are still largely reluctant to invest in ABS, there is a potentially strong demand that may arise from emerging markets. For example, according to Srivats (2014), the Indian Pension Fund Regulatory & Development Authority recently announced that it would soon allow pension funds to invest in covered bonds and ABS.

**What do these developments mean for the Swiss financial center and the future of investment banking?**

One of the major goals of European investment banks should be to restore investor confidence in ABS and securitization. This should not be that hard given that European ABS performed quite well during the most recent financial crisis compared with US ABS. The Swiss financial center could use its reputation, for example, to introduce a quality label such as the Prime Collateralized Securities (PCS) label mentioned above. Financial innovations—combining elements of covered bonds, exchange-traded funds (ETF), and ABS—that are better designed to target regulations and yet have an attractive profile could be created. To this end, banks could cooperate and create Swiss multi-bank platforms that only accept high quality ABS for trading. Developing new international (Swiss-based) peer-to-peer and business-to-business lending and crowdfunding platforms could serve as a major source of new collateral for new ABS. If at least some of these developments were successful, they might have a major positive impact on Swiss investment banking.



## Disintermediation of Financing

Traditionally, in Europe (as, for example, in Japan and other Asian countries), banks have been the primary source of financing for non-financial companies.<sup>15</sup> According to ECB (2012) data, in the eurozone about 81% of corporate financing is still provided by bank loans, while the remaining 19% is provided by debt capital markets. This split is the exact opposite in the US, where capital markets provide the majority of corporate financing (ECB, 2012).

However, the post-crisis regulatory and market environments have created a structural shift away from financing by banks. In particular, issuance volumes in high yield bonds and the size of the leveraged loans market have significantly increased in the recent years (Bloomberg, 2014).<sup>16</sup> According to Bloomberg (2014, p. 3): “There is a shift in financing models that is happening in Europe, away from bank-led financing-type models to institutional capital markets,” says Mathew Cestar, Managing Director, Head of Leveraged Finance EMEA, Credit Suisse. For example, according to ECB data, between 2009 and 2013 the volume of bank credit decreased in terms of European GDP by 7.4%, while at the same time loan volumes rose by 2.4% (EIB, 2013). This “disintermediation” can take different forms, from a direct issuance of publicly traded bonds to direct loans from non-bank investors (shadow banking) such as insurers and pension funds. One interesting recent development is that such non-banking financial institutions often co-lend with banks, or buy various kinds of asset-backed bonds whose payoff is directly linked to a given project (the so-called “project” bonds). The market for such instruments is gradually developing in Europe, and its growth potential is high. Importantly, investment banks retain a major role in the new system. In addition to intermediating the debt transaction, investment banks often keep a partial exposure to the underlying credit risk, guaranteeing that they have enough “skin in the game” to align their interests with those of investors. This changing business model offers very attractive margins for banks and, at the same time, provides access to new attractive investment opportunities for investors who are less strictly regulated than banks. At the same time, investment banks also continue to provide structuring and servicing functions, which require a lot of experience and networking. In addition to insurance companies, pension funds, and hedge funds, one important class of shadow-banking institutions entering the new market environment is represented by so-called private debt funds that buy privately issued bonds, typically from SMEs. According to Prequin (2015), in Europe up to July 2014 over 60 new private debt funds had provided a total of USD 33 billion in capital. These so-called private placement (PP) markets are only starting to grow in Europe: according to Private Placement Monitor (2015), a data provider, the US PP market had a volume of USD 54 billion in 2013, representing 47.7% of the global PP market, while Europe accounted for 27.2%. Importantly, private debt funds are starting to actively cooperate with investment banks as there are significant synergies in such cooperation. For example, in January 2014 BlueBay Asset Management announced collaboration with Barclays and Societe Generale. Institutional leveraged loans is another fast-growing market: According to Bloomberg (2014), in 2013,

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<sup>15</sup> See Bijlsma and Zwart (2013) for a detailed analysis of the differences in bank versus capital markets financing across Europe and for a discussion of the potential sources of these differences.

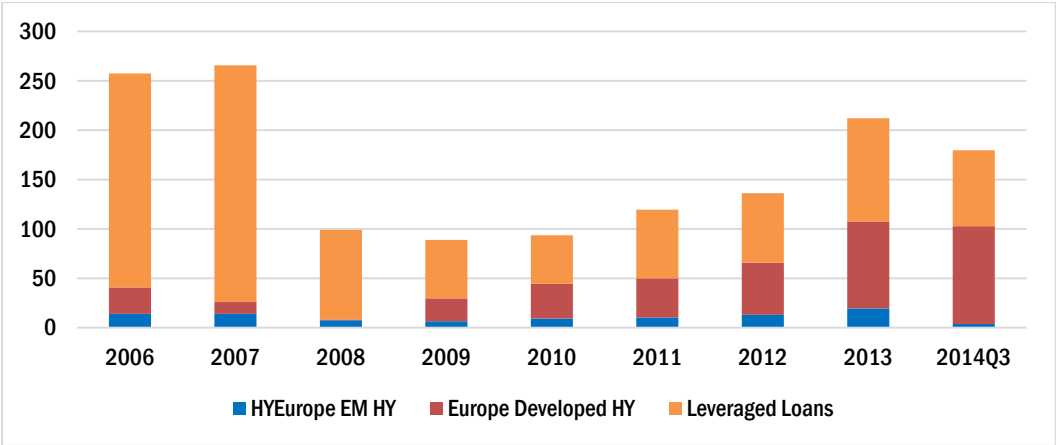
<sup>16</sup> A leveraged loan is a loan extended to a company with a low credit rating and/or a high default risk. If not pooled into a CLO, leveraged loans are effectively a form of high-yield bonds: they are almost never kept on the balance sheets of the issuing (syndicating) banks and are immediately resold to other institutional investors.

issuance in Europe reached EUR 70.8 billion while the issuance of European high-yield bond issuance reached the amount of EUR 96.5 billion (see Figure 10). It is also important to note that the dynamics of leveraged loans are related to those of the CLO market (see Figure 8, above). An active and liquid CLO market naturally spurs growth in leveraged loans: in many cases (especially in the US), these are syndicated by investment banks, pooled, and then resold to institutional investors in the form of CLOs.<sup>17</sup>

**What do these developments mean for the Swiss financial center and the future of investment banking?**

Banks of the Swiss financial center should quickly invest in developing new shadow-banking institutions and strengthen cooperation with existing shadow banks, with an emphasis on the important synergies offered by such cooperation. Private debt funds are just one possible example of “outsourcing loans”. As explained above, this form (as well as many other forms) of shadow banking is still underdeveloped in Europe, and offers major growth opportunities for Swiss banks. If banks succeed in developing at least some of these initiatives, they will secure a major source of income with a low capital intensity. If they do not, many of investment banks’ intermediary functions may eventually become redundant and may be, to a large extent, taken over by shadow banks.

Figure 10: European leveraged finance issuance (EUR billions, 2006–2014Q3)—emerging markets’ (EM) and developed countries’ high-yield (HY) bond issuance, and leveraged loans (AFME, 2014).



**Pension Funds**

Pension funds will play a major role in the future of investment banking for two reasons:

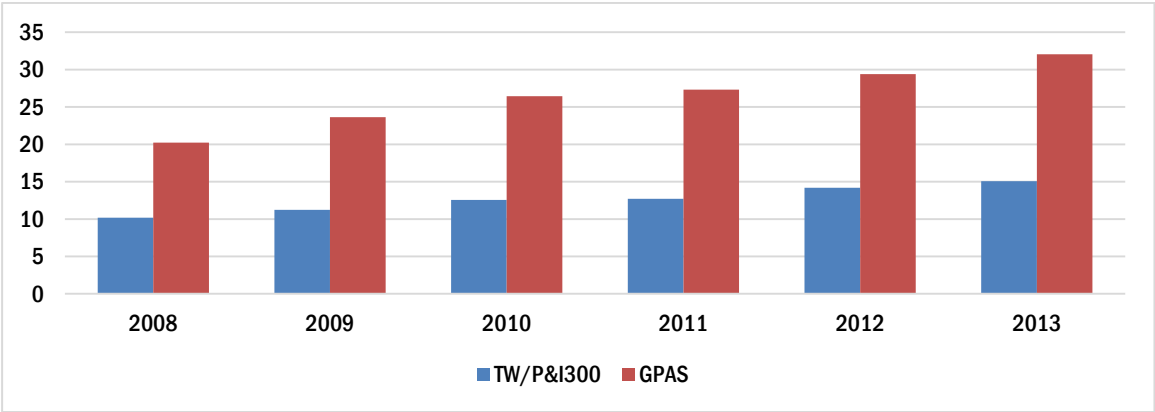
- They are clearly among the largest and most important institutional clients of investment banks. And as their assets and liabilities gradually increase (see Figure 11), their demand for higher-yield assets will go up, creating major opportunities for investment banks to strike new deals.

<sup>17</sup> See Adrian (2015) for a discussion of the economics of leveraged loans and related regulatory challenges.

- They are gradually entering shadow-banking territory. If this trend continues, they may eventually take over a part of what were formerly considered to be investment banking activities.

To gain an idea of the magnitude of these effects, it should be noted that the world's 300 largest pension funds held USD 14.9 trillion of assets at year-end 2013, representing 46.5% of total global pension assets, according to Towers Watson (2015) (Figure 11).

Figure 11: Global pension funds assets (GPAS) and top 300 pension fund assets under management in USD trillions (Towers Watson, 2015).



This enormous capital combines with the current low interest rate environment and forces pension funds to look for non-standard ways of deploying it. According to a recent ratings report issued by Fitch (2014), pension funds are expanding their footprint in the capital markets reflecting a broader structural market shift caused by bank disintermediation. Pension fund involvement in the capital markets includes typical shadow-banking activities that would, in earlier times, have been fulfilled by investment banks: Pension funds often provide liquidity necessary for investments into infrastructure. Furthermore, they also often engage in repurchase (repo) transactions. Recent examples include California Public Employees Retirement System (CalPERs), which now provides direct loans to US municipalities. Importantly, CalPERs emphasizes that they always co-invest with a financial partner (say, an investment bank). According to Prequin (2014), most pension funds are actively considering investing in private debt funds (see also the section on disintermediation above.) All these developments clearly offer important opportunities for investment banks to cooperate with pension funds. If things develop well for investment banks, strategic partnerships between banks and funds might become an efficient business model for the future; if not, pension funds may eventually take over some of investment banks' business.

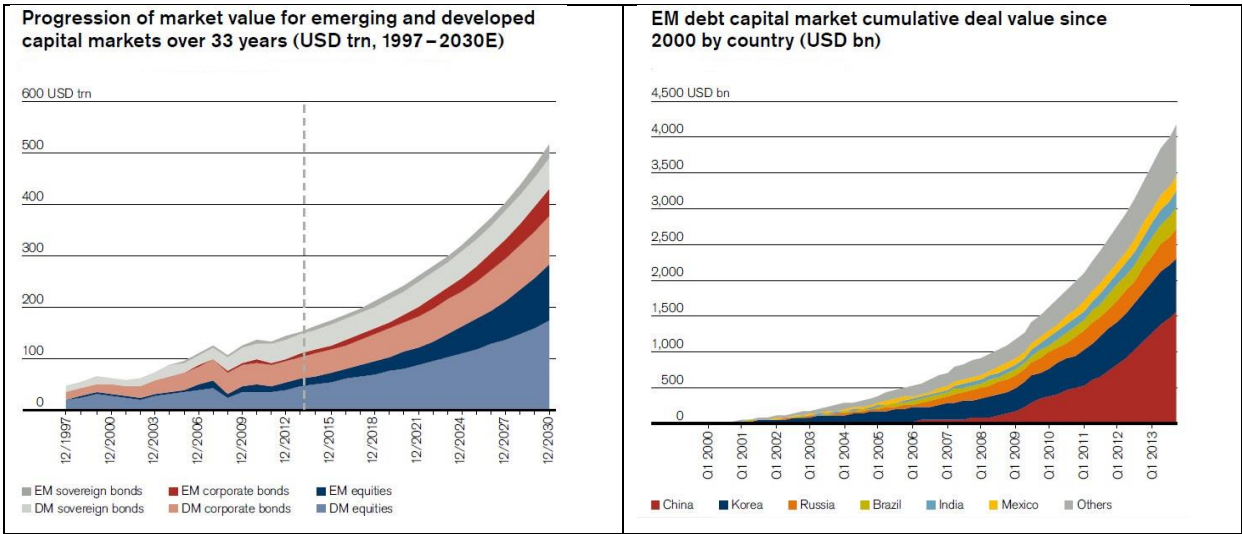
### Globalization of Trade: Emerging Markets and Asia

Emerging markets (EM) is one of the most important segments of the world economy. According to an estimate of the Credit Suisse Research Institute (2014, p. 3), "the market value of EM equities, corporate and sovereign bonds will increase by USD 98 trillion, USD 47 trillion, and USD 17 trillion,

respectively, in nominal dollar terms between 2014 and 2030”. Figure 12 details the estimated growth over this period.

As one can see from Figure 12, a major fraction of EM growth is concentrated in Asian economies. At the same time, financial markets in Asia are maturing and are becoming more efficient.<sup>18</sup> While Asian markets offer enormous growth potential in all areas of investment banking, this section of the paper will concentrate on the fixed-income, currencies, and commodities (FICC) business that has been the worst performing area of investment banking since the most recent financial crisis. Falling margins and spreads and strict regulatory requirements were the major drivers of FICC’s recent disappointing performance. However, according to McKinsey&Company (2014), Asia was the only region where FICC revenue continued to grow during and after the crisis. McKinsey projects that Asia will become the world’s largest FICC market by 2018. The following table shows that the growth potential in Asian markets over the next few years will be quite high, with the most attractive sources of FICC revenue growth being located in China, India, and Indonesia. McKinsey&Company (2014b) also estimates that the revenue base from corporate customers will increase from USD 15 billion in 2013 to USD 22 billion in 2018, corresponding to an annual growth rate of 9%. See also Walter and Sisli (2006).

Figure 12: Debt and equity emerging market growth (Credit Suisse Research Institute, 2014).

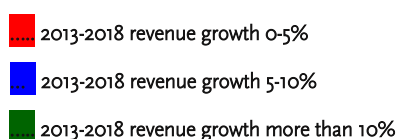


<sup>18</sup> For example, Carpenter, Lu, and Whitelaw (2014) find that Chinese stock price informativeness has increased and compares favorably with that in the US. They also find that the efficiency of corporate investment is highly correlated with stock price informativeness.

Table 3: Corporate and investment banking (CIB) and FICC revenue pool (USD billions) including 2018 estimates (McKinsey&Company, 2014b).

	Total CIB post-risk revenue			2013 FICC revenue breakdown by product					Accessibility for foreign players
	2013	2018E	Delta (2013-18)	Total	FX	Rates	Credit	Comm.	
China	438	706	268	10.3	4.9	2.0	2.7	0.7	Low
Japan	94	104	10	13.5	1.7	8.0	3.6	0.2	High
India	22	45	23	4.5	3.0	1.1	0.3	0.1	Medium
Australia	40	42	2	5.3	1.8	1.8	1.4	0.3	High
Korea	25	37	12	2.8	1.5	0.8	0.5	<0.1	Medium-high
Indonesia	17	32	15	1.6	0.9	0.5	0.2	<0.1	Medium-high
Hong Kong	22	30	8	4.7	2.2	1.5	1.0	0.3	High
Singapore	17	25	8	4.9	2.3	1.3	0.8	0.5	High
APAC	729	1103	374	53.9	21.0	18.4	12.3	2.2	Medium
Asia ex-China	291	397	106	43.6	16.1	16.4	9.6	1.5	Medium-High

Source: McKinsey Global Banking Pools; McKinsey Global Corporate & Investment Banking Practice



### Exchange-Traded Funds

Exchange-traded funds (ETFs) is one the fastest growing segments in financial markets: in 2014, the assets of exchange-traded funds reached USD 2 trillion for the first time, with total ETF inflows reaching USD 232 billion in 2014, according to ETFGI (2015). Recent research (Ramaswamy, 2011) suggests that interesting synergies exist between the investment banking activities of a bank and its asset management subsidiary or the unit within the parent bank that acts as the ETF sponsor. The nature of these synergies is as follows: Investment banks’ market-making activities require maintaining a large inventory of stocks and bonds that is expensive both in terms of the funding cost and in terms of capital requirements, particularly when these instruments are illiquid. However, significant cost savings can be achieved by posting “costly” (in terms of capital requirements) securities as collateral assets in total return swap transactions typically used for synthetic ETFs. The underlying mechanism is very similar to securitization whereby ETFs effectively serve to securitize banks’ inventories. Investment bankers and regulators are both aware of this and related new regulations might be coming in the future, particularly as the ETF market continues to grow. For example, haircut rules for equity collateral differ significantly across countries, with the most attractive haircut rules being offered by Luxembourg. As a result, many synthetic ETFs tend to be registered there. It is not clear how long such a regulatory arbitrage is likely to survive.

## **Quantitative Easing (QE)**

The plan of the European Central Bank to inject around EUR 1.1 trillion into the European economy will clearly have large effects on all European (and not only European) banks and markets. The largest effect of QE for investment banks will probably come through lower interest rates: Investors' appetite for yield may potentially force more investors to move out of bonds and into more risky asset classes. Low borrowing costs should also boost bond issuances. For example, while the issuance of euro-denominated debt by US companies stood at EUR 50 billion in 2014, Bank of America Merrill Lynch analysts estimate that on the current run rate the issuance of euro-denominated debt by US companies will reach EUR 100 billion in 2015. At the same time, there is a clear shortage of safe assets in the global economy, partially driven by the "global savings glut". The ECB bond-buying program may make safe assets even scarcer as a large part of these assets will end up at the ECB. This may lead to higher bond-liquidity premia. The overall impact on the bond market is therefore unclear.

## CONCLUSION

Investment banking is undergoing unprecedented change. Growing regulatory pressure is pushing investment banks away from their market-making and trading activities, and even away from some forms of lending activities: it is basically becoming more and more costly to keep risky inventories on balance sheets. This is going to lead to profound changes in the landscape of financial markets, both in terms of liquidity and efficiency, and in terms of the changing pools of buyers and sellers for different types of securities. The gradual move to “off-balance-sheet investment banking” is one of the main causes of the growing trend toward the “disintermediation of financing”, which has taken two forms: financing directly through financial markets (Europe is moving from the 80% loans/20% debt financing model toward the US 80% debt/20% loan financing model); and a growth in shadow banking—that is, lending by non-bank institutions, particularly pension funds. While the first form of disintermediation is mostly beneficial for investment banks that can collect issuance fees without putting any burden on the balance sheet, the second form poses a threat of competition. Investment banks could possibly react by creating strategic alliances with shadow banks.

Major investment banking activities are in one way or another related to (assisting in) creating liquid debt instruments: corporate and sovereign bonds and various forms of ABS, MBS, CLOs, etc. This liquidity creation and transformation is pivotal for the functioning of the economy. But this activity can only be supported when there are enough buyers for these debt instruments and enough liquidity in the corresponding secondary markets. Existing regulations have natural, built-in self-conflicts whereby they try to stimulate liquid claim creation and at the same time impose regulatory costs on potential security holders (banks, insurance companies, and pension funds). Without a resolution to these internal regulatory conflicts, it may be difficult to create active and liquid markets for debt instruments, and this may in turn lead to a drop in banks' lending activities and hurt the real side of the economy. If regulators succeed in creating an environment in which banks can efficiently securitize and (partially) resell their debt instruments, this will lead to mutually reinforcing dynamics of lending and securitization activities, which should naturally stimulate growth. If the regulators miss this goal, a large part of banks' lending activities might eventually be taken over by different types of shadow banks. The same concern affects investment banks' market-making activities: holding a large inventory will only be possible if there is enough liquidity in the market, but liquidity is a self-fulfilling phenomenon whereby liquidity provision by one bank stimulates liquidity provision by other banks. New “securitization-type” vehicles may eventually have to be developed to resell pools of inventories and collateral and to overcome restrictive capital requirements. This trend is already starting with ETFs, which are often used as “collateral securitization devices”.

Digitalization also has the potential to change some investment banking business models: the growing competitive pressure from FinTech niche players will push down market-making margins and may eventually lead to consolidation and growth in multi-bank platforms. Investment banks will continue expanding their global scope and emerging markets do offer a source of growth for the next 10–15 years, but tough regulation will eventually reach these parts of the world too, and the competition from local banks will be growing. Other strategic solutions should already be sought now.

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